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MONTHLY REPORT

OF

THE DEPARTMENT OF AGRICULTURE,

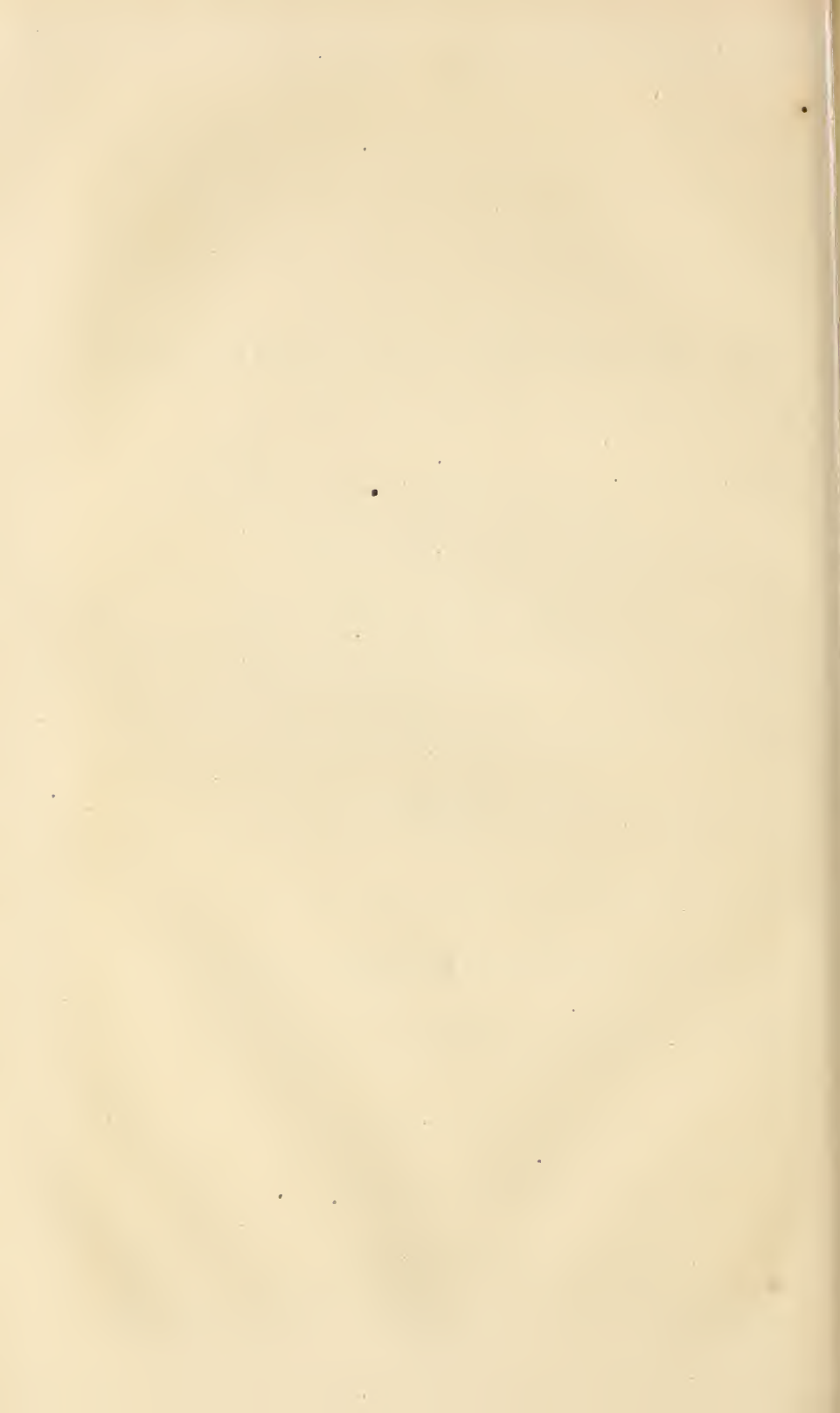
FOR

AUGUST AND SEPTEMBER,

1869.



WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1869.



MONTHLY REPORT.

WASHINGTON, D. C., *September 22, 1869.*

SIR: I herewith present for publication a report upon the condition of farm crops for the months of August and September, including extracts from statistical correspondence, and articles upon the agriculture of Colorado, stock-raising in Mississippi, fruits on the eastern shore of Lake Michigan, abortion in cows, live stock at Chicago, the tea plant in Mississippi, Guernsey cattle, current prices of English short-horns, meteorological tables, and various other matters.

Respectfully,

J. R. DODGE,
Statistician.

Hon. H. CAPRON,
Commissioner.

CONDITION OF THE CROPS.

The following table showing the mean temperature and rain-fall of the several States, as indicated by the meteorological returns of the Smithsonian observers, for the months of July and August, in comparison with those months of last year, will aid in illustrating the accompanying crop statements. The season has been peculiar. The region most subject to drought, that west of the Mississippi and Missouri, has had the most regular supply of rain, and the valley of the former has had an abundant rain-fall to its mouth, while Alabama and Georgia have suffered from drought, and the Atlantic States in a still higher degree, not only throughout the tide-water region, but in a large portion of the eastern States.

State.	1868.				1869.			
	July.		August.		July.		August.	
	Mean temp.	Rain-fall.	Mean temp.	Rain-fall.	Mean temp.	Rain-fall.	Mean temp.	Rain-fall.
	°	Inches.	°	Inches.	°	Inches.	°	Inches.
Maine	70.9	2.80	67.6	2.25	68.2	2.28	64.2	1.93
New Hampshire	73.6	2.73	68.8	2.81	67.9	1.48	62.7	2.98
Vermont	74.4	2.41	66.1	2.44	68.1	2.76	64.5	3.13
Massachusetts	74.2	1.62	69.5	4.31	69.8	2.76	66.9	2.03
Rhode Island	69.7	2.99	67.9	2.71	69.6	0.76	67.4	3.21
Connecticut	73.4	2.19	69.6	6.57	70.1	3.70	67.7	2.65
New York	77.2	2.63	70.8	3.62	69.6	4.61	67.9	2.93
New Jersey	78.9	5.37	73.0	4.12	74.2	2.76	73.1	1.36

Mean temperature and rain-fall of the several States, &c.—Continued.

State.	1868.				1869.			
	July.		August.		July.		August.	
	Mean temp.	Rain-fall.	Mean temp.	Rain-fall.	Mean temp.	Rain-fall.	Mean temp.	Rain-fall.
	°	Inches.	°	Inches.	°	Inches.	°	Inches.
Pennsylvania	78.6	3.17	71.7	3.34	72.1	3.31	70.8	1.65
Delaware					78.4	1.65	70.9	0.30
Maryland	80.5	3.37	74.2	4.69	75.8	4.02	74.1	1.32
Virginia	78.8	4.69	74.1	3.30	77.0	2.94	76.2	1.35
West Virginia	80.5		75.7		73.8	3.40	76.0	1.30
North Carolina	80.6	8.11	76.4	5.54	78.8	3.14	77.4	3.70
South Carolina	80.8		76.9	6.40	82.1	3.81	80.7	4.50
Georgia	80.3	3.54	71.2	2.17	79.5	4.89	78.4	2.57
Alabama	79.5	5.61	76.1	3.14	80.0	3.95	80.3	3.10
Florida	82.8	7.70	83.6	4.70	83.9	7.57	83.2	4.55
Texas	82.0	3.90	81.5	5.03	81.6	9.16	83.0	3.24
Louisiana	83.3		82.1					
Mississippi	80.1	9.64	79.5	3.62	81.8	2.86	81.2	6.46
Tennessee	81.3	2.98	76.7	4.46	77.7	3.04	80.1	3.05
Kentucky	80.8	3.17	73.3	5.50	75.9	4.52	77.4	3.51
Ohio	81.0	2.47	72.2	4.52	73.8	4.99	71.5	1.68
Michigan	76.0	1.45	66.1	2.52	68.6	4.07	66.8	3.26
Indiana	82.3	2.81	72.8	4.11	74.3	6.32	75.8	3.26
Illinois	81.8	2.41	71.2	3.13	69.4	4.99	75.3	3.86
Wisconsin	77.8	2.86	67.5	2.60	68.7	3.12	68.0	4.84
Minnesota	78.1	3.65	67.1	3.02	69.1	2.42	68.8	7.46
Iowa	80.8	4.08	68.2	2.93	71.1	7.80	71.9	7.55
Missouri	82.9	2.51	73.1	5.49	76.6	4.34	78.5	4.10
Kansas	85.5	4.06	72.5	8.75	75.5	6.88	79.4	4.86
Nebraska	83.2	2.52	70.5	4.01	81.5	6.60	74.6	8.48
Utah	73.8		72.8	3.69	72.6		73.6	
California	66.6				70.2	0.09	67.6	0.00
Montana					66.5	0.25	63.1	0.50

On the southern Atlantic seaboard the heat has been greater this year than in 1868, and the rain-fall less; north and east of New York the heat has been less, as also the rain-fall. In the one case it was too hot, in the other too cold, for corn and other summer crops, which suffered accordingly. While drought has prevailed east of the Alleghanies, the great Mississippi basin has had an unusual amount of rain. West Virginia and Ohio alone of the central area had less rain-fall (in August) than in 1868. The excessive moisture of the summer is sustained to its close, especially in Wisconsin, Minnesota, Iowa, Nebraska, Kansas, and Missouri. Both the early and the latter rains have been somewhat extraordinary west of the Missouri, yet the high temperature and deep thirsty soils of that region have converted the visitation into a blessing.

The drought of the seaboard has not been equalled in many years. "Extracts from correspondence" will show the injurious effects of this excessive drought on corn, cotton, and garden vegetables.

Corn.—The corn crop has been the prey of numerous ills in every section of the country. The only States that now show an average condi-

tion are: Nebraska, Kansas, Florida, Louisiana, Texas, and Arkansas. Excessive rains retarded planting, and necessitated replanting in the spring throughout the west and south; cold, wet weather prevented healthy, vigorous growth in almost every State; and in the season of earing and maturing a serious drought affected it on the Atlantic coast, with injurious heat in the South, and unfavorable reduction of temperature in the North. In deep soils, naturally drained, the extreme moisture of the West did no injury; in heavy or flat lands, with clay subsoil, the damage was great, in some cases resulting in total failure. The loss, as shown in the table, is forty-nine per cent. in Virginia; from thirty to forty in Maine, Vermont, Maryland, North Carolina, South Carolina, Tennessee, Kentucky, Illinois, Michigan, Wisconsin; from twenty to thirty in New Hampshire, Connecticut, New York, New Jersey, Delaware, Georgia, Indiana, Ohio, Iowa, and Minnesota; from ten to twenty in Massachusetts and Pennsylvania, and one to ten per cent. in Rhode Island, Alabama, Mississippi, Missouri, and California. Unless the close of the season is very favorable, there must be one hundred and fifty millions of bushels less than a full crop.

Cotton.—There will be a reduction in the yield of cotton, from the Carolinas to Alabama, and a material increase from Mississippi to Texas. Georgia, Florida, and South Carolina have suffered most, mainly from drought, in a few localities from rust, the caterpillar, and boll worm. Our estimates make the increase in Mississippi, Louisiana, and Texas, respectively, ten, twelve, and fourteen per cent. The probabilities at present favor a yield of two million seven hundred and fifty thousand bales.

Wheat.—This crop, as a whole, is large. The only States showing a decrease are Illinois, Michigan, Iowa, and California. Some of it is inferior in quality, and a small portion has been injured by rains after harvest, but a considerable portion of the western wheat is of good quality, and that of the South is decidedly superior.

Fruit.—Fruits, as a rule, have yielded abundantly; apples in a less degree than other species. New York, Pennsylvania, West Virginia, Michigan, and Illinois, all apple regions, have nearly a full supply; New England a material reduction.

Stock hogs.—There is not only a reduction in the number of stock hogs, but also in condition. Missouri, Kansas, Nebraska, and Minnesota, rapidly growing States, have made an increase in numbers, as have some of the southern States. There is apparently a decrease, as compared with last year, of five to ten per cent.

Table showing the condition of the crops on the 1st day of September, 1869.

STATES.	CORN.—Average condition September 1.	WHEAT.—Average condition when harvested.	RYE.—Average condition when harvested.	OATS.—Average condition when harvested.	BARLEY.—Average condition when harvested.	BUCKWHEAT.—Average condition September 1.	POTATOES, (<i>Solanum tuberosum</i>).—Average condition Sept. 1.	POTATOES, (<i>Batatas edulis</i>), sweet.—Average condition Sept. 1.	COTTON.—Average condition September 1.	BEANS.—Average condition September 1.	SORGHUM.—Average condition September 1.	SUGAR CANE, (not sorghum).—Average condition September 1.
Maine.....	6	11.2	10.6	11.6	11	9.6	9	.....	.....	8.8	.....	.....
New Hampshire.....	3	11.3	10.7	11.4	10.8	10.2	10.5	.....	.....	9.8	.....	.....
Vermont.....	6.8	11.2	10.1	12	10.7	10.6	10.6	.....	.....	9.4	.....	.....
Massachusetts.....	8.7	10.8	10.6	12.2	10.6	9.5	9.1	.....	.....	8.5	.....	.....
Rhode Island.....	9.9	.....	10.6	11	11	.....	12.3	.....	.....	10	.....	.....
Connecticut.....	8	11.5	11.5	12.5	11.5	9	11.5	.....	.....	10	9.5	.....
New York.....	7.3	10.6	9.9	11.5	11.2	9.8	10.5	.....	.....	6.5	.....	.....
New Jersey.....	7.5	11	10.9	11.2	9.5	7.7	11.7	9.4	.....	10.8	9.3	.....
Pennsylvania.....	8.3	11	10.4	12	9.9	9.1	10.8	10	.....	9.3	8.5	.....
Delaware.....	8	11	10	9	10	6.5	7	7.5	.....	10	8	.....
Maryland.....	6.3	11.3	10.1	10.7	9.4	7.2	7.9	7.4	.....	8	7.5	.....
Virginia.....	5.1	11.5	10.9	10.2	.....	4.4	7.3	7.3	.....	6.2	5.7	.....
North Carolina.....	7	11.8	10.7	10.7	8	8	9.1	8	8.8	7.7	7.6	.....
South Carolina.....	6.3	10.8	10.2	11.2	.....	.....	8.2	6.1	7.7	8	7.1	6.3
Georgia.....	8	10.2	9.8	9.9	10	.....	9.2	7.8	8	8.4	7.7	9.2
Florida.....	10.6	.....	9.5	10.6	.....	.....	9.5	9.6	8	9	.....	9
Alabama.....	9.3	10.4	10	10.2	10.2	.....	9.2	8.6	9.4	9	9.1	9.5
Mississippi.....	9.3	10.8	10	10.2	10	.....	9.5	9.5	11	10.2	9.3	10.2
Louisiana.....	11	.....	11	12.3	.....	.....	11	10.2	12	10	12.5	11.3
Texas.....	11.2	11	10.5	10.6	.....	.....	11.5	10	11.4	11.5	5.8	10.2
Arkansas.....	10.2	11	10.6	11.5	.....	.....	11.2	10.4	9.8	9.2	9.5	.....
Tennessee.....	7	10.9	10.2	10.1	10.2	8.1	8.2	7.7	7.9	7.7	7.5	.....
West Virginia.....	7.7	11	9.2	10.9	10	8.5	9.7	9.6	.....	9.2	8.9	.....
Kentucky.....	6.8	11.5	9.4	10	9.4	9.1	9.4	8.2	9.6	8.1	8.1	.....
Missouri.....	9.9	10.1	9.7	11	9.7	9.8	11.7	10.3	9.6	9.9	9.2	.....
Illinois.....	6.8	8.9	9.7	10.6	8.2	9.6	11	9.9	8	9.8	8.8	.....
Indiana.....	7.2	10.5	10	10.7	10.5	9.2	11.1	10	.....	10	8.6	.....
Ohio.....	7.4	11	10.9	11.7	10.6	9.1	11	9.7	.....	9.4	8.3	.....
Michigan.....	6.8	9.8	10.1	11	10.1	10	10.8	7.7	.....	9.7	8.4	.....
Wisconsin.....	6.5	10.5	10.1	11.5	10.7	9.8	11	.....	.....	10.2	7.5	.....
Minnesota.....	7.8	11	10.7	11.1	11	10	11.7	.....	.....	9.8	7.2	.....
Iowa.....	8	8.2	9.3	10	9.4	9.9	11.7	9.6	.....	9.8	8.5	.....
Kansas.....	12	11	9.7	11.6	10.5	11.5	11.6	10	.....	9.7	10.6	.....
Nebraska.....	11.5	10.2	10.1	11.6	10.5	11.5	12	9	.....	9.6	11	.....
California.....	9.9	9.5	9.6	9.5	10.2	10.4	10.2	10.2	.....	9.9	.....	.....

Table showing the condition of the crops, &c.—Continued.

STATES.	TOBACCO.—Average condition September 1.	HAY.			HOPS.		STOCK HOGS.		WOOL.—Weight of fleece compared with an average clip.	APPLES.—Average condition September 1.	PEACHES.—Product compared with an average.	GRAPES.—Average condition September 1.
		Product of timothy compared with last year.	Average condition of timothy when harvested.	Product of hay of all kinds compared with last year.	Acreage compared with last year.	Average condition September 1.	Number for fattening compared with last year.	Average condition as to weight and size.				
Maine.....	.....	8.9	11.2	8.7	9	9.5	8.9	10	8.9	6.2	.....	9.3
New Hampshire.....	.....	9.1	10.8	8.6	9	9	9.5	9.7	9.3	7.4	8.6	9.6
Vermont.....	.....	10.3	10.1	10	8.5	11	9	10	9.6	9	.....	9
Massachusetts.....	8.3	9.1	10.3	9.1	.....	.....	9.8	9.8	9.8	6.5	9	8.5
Rhode Island.....	.....	11.6	12	10.6	.....	.....	9.3	9.6	9.6	7.6	10	10.6
Connecticut.....	9.5	10.2	12	10.7	.....	.....	9.2	10	10.2	5.2	9	8.5
New York.....	9.6	11.4	10.3	11.4	9.4	10.1	9.2	10	9.6	8.8	11.6	9.9
New Jersey.....	.....	9.9	10.2	10.1	.....	.....	9.4	9.9	10.2	10.2	13.5	9.9
Pennsylvania.....	8.3	11	10.1	11.3	9.3	9.7	10.1	10.1	9.7	10.4	12.6	10
Delaware.....	.....	7.5	9	10	6	2	8	10	10	9.5	13.5	8.5
Maryland.....	7	9.8	10.5	9.5	.....	.....	10	9.7	9.7	11.5	11.9	10.5
Virginia.....	5.9	10.4	10.2	10.5	8.7	7.5	9.5	9.5	9.9	9.8	7.2	10.8
North Carolina.....	7.8	9.5	9.9	9.2	.....	.....	9.7	9.9	9.8	6.9	3.3	9.8
South Carolina.....	7	.....	6.5	6.7	.....	.....	10	10.1	9.5	7.6	4.7	9.6
Georgia.....	7.5	8.6	7.8	9.4	.....	.....	9.6	9.7	9.9	6.9	5.2	9.2
Florida.....	11	.....	.....	13	9.5	.....	11.4	10.3	10	10	9.8	12
Alabama.....	9.5	.....	7	8.5	.....	.....	9.4	9.8	10	6.3	4.9	8.9
Mississippi.....	9.6	.....	.....	10.1	.....	.....	10	9.6	9.6	7.7	5.6	9.6
Louisiana.....	10	.....	.....	11	.....	.....	11.5	9.3	9.9	10.1	7.2	10
Texas.....	10.5	.....	.....	11	.....	.....	10	9.8	9.5	8.8	8.9	9.5
Arkansas.....	10	13	13	12.8	.....	.....	11.6	10.8	10.3	9	5.2	9.2
Tennessee.....	8.2	10.9	11.1	10.8	.....	.....	9.4	9.7	10.2	7.4	5.5	9.4
West Virginia.....	8.9	11.5	10.9	12.1	.....	10	9	9.5	9.9	12	11	10
Kentucky.....	7.7	10.1	10.3	10	.....	.....	9.6	10.2	10.1	10.1	10	8.8
Missouri.....	9.4	13	10.8	13.6	10.3	10.5	10.3	10.2	10.1	11.3	7.1	9.1
Illinois.....	9.7	11.8	9.7	11.5	9.5	9.3	9.1	9.6	9.8	9	8.5	7.5
Indiana.....	9.8	11	10	11.7	9.7	10.3	9.1	9.6	9.7	10	9.5	8.3
Ohio.....	8.3	10.7	10	11.1	9.6	9.7	9	9.6	9.5	8	11.8	8
Michigan.....	10	11.3	9.4	11.3	7	9.6	9.8	9.9	9.4	9.9	15.1	9.9
Wisconsin.....	9.2	12.2	9.8	11.1	6.5	9.2	9.9	9.8	9.8	10	.....	9.5
Minnesota.....	9.1	12.4	10.5	10.2	7.5	10.8	10.7	10.2	10	11.5	.....	10.5
Iowa.....	8.8	11.2	9.3	11.2	10	9.5	9.5	9.8	9.8	10.2	4.7	8.7
Kansas.....	11	12	11.5	12.5	9.3	10	10.7	10.5	10.5	11.3	6.1	10.6
Nebraska.....	10	11.5	10.3	12	.....	.....	10.6	10.5	10.1	9.2	6.2	8.4
California.....	10.2	9.4	8.6	10.2	10.1	9.5	9.6	9.9	10.2	10	8.3	8.7

Table showing the condition of the crops on the first day of August, 1869.

STATES.	SPRING WHEAT.—Average condition August 1.	SPRING RYE.—Average condition August 1.	OATS.—Average condition August 1.	BARLEY.—Average condition August 1.	CORN.—Average condition August 1.	BUCKWHEAT.		BEANS.—Average condition August 1.	POTATOES, (<i>Solanum tuberosum</i>).—Average condition August 1.	POTATOES, (<i>Batatas edulis</i>) sweet.—Average condition August 1.	HAY.—Average condition of timothy, August 1.
						Acreage compared with last year.	Average condition August 1.				
Maine	10	10	10.2	10.2	8.2	10 1	9.6	9.3	10.5	.....	9.9
New Hampshire	10.5	10.4	11	11	9	9.6	9.6	10.9	10.4	.....	9.6
Vermont	10.7	10.5	11	10.6	8.4	10	10.2	10	10.4	.....	10.8
Massachusetts	10.4	10.2	10.5	10.2	9.1	9	9.8	8.6	10.8	.....	10.6
Rhode Island	10	10	10.3	10.3	9.6	10	10	8.5	10.6	.....	10.3
Connecticut	10.5	11	11	11	8.6	8.8	9.6	10.2	11	.....	10.4
New York	10.7	10.2	11	11	8	9.8	10.3	10	11.1	.....	10.9
New Jersey .....	.....	.....	10.8	10.2	10.1	9.6	10	10.1	10.8	10.6	10
Pennsylvania	10.4	10.1	11.2	10.6	9.7	10	10.2	9.8	11.5	10.5	10.7
Delaware .....	.....	.....	10	10	10	10	12	10	12	10	10
Maryland .....	.....	.....	10.5	10	9.7	9.5	10	10	11	9.5	9.6
Virginia .....	.....	.....	10	.....	8.7	9.8	8.8	8.7	10	9.8	10.1
North Carolina .....	.....	.....	10.6	8.2	9.2	10.6	9.5	8.6	9.7	9.1	9.6
South Carolina .....	.....	.....	10.8	.....	6.2	.....	.....	7.2	8	6.6	8.7
Georgia .....	.....	.....	10.6	10.2	9.6	.....	.....	9.2	9.9	9.5	9.7
Florida .....	.....	.....	10.2	.....	10.3	.....	.....	9.7	8.3	11.2	.....
Alabama .....	.....	.....	10	.....	10.3	.....	.....	9.1	9.3	9.5	.....
Mississippi .....	.....	.....	10.3	.....	9.5	.....	.....	9.5	9.7	10	.....
Louisiana .....	.....	.....	9.1	.....	10.5	.....	.....	.....	10.7	9.8	.....
Texas .....	.....	.....	11.3	9.8	12	.....	.....	10.5	12.4	10.6	10.4
Arkansas .....	.....	.....	11	.....	10.5	.....	.....	11	11.5	10.4	10.7
Tennessee .....	.....	.....	10.6	10	9.4	10.2	10.1	9	9.9	10	11
West Virginia	10.5	10.3	10.5	10.3	10.6	10.1	10.2	10.4	11.9	10.7	10.8
Kentucky .....	.....	.....	10.1	10.2	9.2	10.3	9.7	9.5	10.5	9.9	10.5
Missouri	9.1	10.1	11.5	10.8	9.2	9.9	9.9	9.7	12.9	10.1	12.1
Illinois	6.5	9.5	10.4	8.5	6.9	9.9	9.5	9.4	11	9.6	10.9
Indiana	7.3	8.9	10.5	10.3	7.7	9.3	9.7	10	12	9.8	11.3
Ohio	11.1	11.4	11.3	10.3	8.3	9.8	10.3	9.5	11.9	10.2	10.2
Michigan	10.2	10.3	11	10.9	7.2	9.9	9.8	9.2	10.7	9.3	10.4
Wisconsin	7.7	10.4	11.5	11	6.6	10.3	10	9.7	11	.....	11.3
Minnesota	10.5	10.4	11	11.4	7.9	10.5	10.1	9.7	10.2	.....	10.8
Iowa	9.1	9.8	10.2	9.6	7.9	10.3	9.7	9.9	11	10.4	10.2
Kansas	10.8	10.6	12	10.9	11.2	12	10.7	9.5	11.3	10.3	11.4
Nebraska	10	9.2	10.9	9.8	9.5	11.2	10.6	10.5	12.5	8.6	11.5
California	8.6	9.5	9.5	9.9	10	10.6	9.9	10.3	10.4	10.3	8

Table showing the condition of the crops, &c.—Continued.

STATES.	HAY.		PASTURES.—Average condition August 1.	TOBACCO.—Average condition August 1.	COTTON.—Average condition August 1.	SORGHUM.—Average condition August 1.	SUGAR CANE, (not sorghum.)—Average condition August 1.	APPLES.—Average condition August 1.	PEACHES.—Average condition August 1.	GRAPES.—Average condition August 1.	CRANBERRIES, Average condition August 1.
	Product of clover, compared with last year.	Average condition of clover when harvested.									
Maine	8.8	10.4	10.2	.....	.....	.....	.....	6.9	.....	8.4	10.5
New Hampshire	9.5	10	10.4	.....	.....	.....	.....	6.3	8.5	10.3	10
Vermont	10	10.5	11.2	.....	.....	.....	.....	9.5	.....	9	.....
Massachusetts	10.4	10.8	9.8	9.5	.....	.....	.....	5.2	10	10.3	10.5
Rhode Island	10	10	10.6	.....	.....	.....	.....	5.6	7.6	10.3	10
Connecticut	9.8	10	11.2	10	10	.....	.....	6.6	9.8	9.8	11
New York	10.6	9.4	11.9	8.7	.....	.....	.....	9	11.6	9.7	.....
New Jersey	9.4	9.6	10	.....	10	.....	.....	9.8	11.9	10.6	11.1
Pennsylvania	9.7	9.2	11.2	9.5	.....	9.2	.....	9.8	12	10.6	10
Delaware	9	9	10	.....	10	.....	.....	12	15	12	10
Maryland	9.2	10.1	9.8	10	.....	9.6	.....	10.5	11.9	10.9	.....
Virginia	10.7	10.6	9	8.6	9	8.2	.....	10	8.9	10.5	.....
North Carolina	11	10.5	9	9	9.3	8.8	.....	6.8	3.6	9.7	10
South Carolina	9	8.6	6.2	.....	7.3	7.2	.....	5.7	4.3	9.3	.....
Georgia	12.6	9.8	9.3	9	10.1	8.9	8.7	7.2	6.1	9.1	.....
Florida .....	.....	.....	10.2	10	10.5	.....	8.5	.....	8.6	10.4	.....
Alabama	11.6	11.2	9.6	9.6	9.8	9	10.5	5.8	5	8.8	.....
Mississippi	10	.....	10.5	9.2	10.7	9.3	12.3	8.1	5.9	8.3	.....
Louisiana .....	.....	.....	10.3	9.3	11.1	10.7	10	8.8	7	9.5	.....
Texas .....	.....	.....	11	10.2	10.8	10	10.5	9.5	8.8	9.6	.....
Arkansas	11	10.8	11.1	10.2	10.5	10.8	.....	9.9	6.9	9.4	.....
Tennessee	11.2	10.6	9.3	9.6	9.5	9.2	.....	7.9	6.5	9.2	.....
West Virginia	11.5	10.4	12.3	10.3	.....	10	.....	11.5	12	13	.....
Kentucky	10.9	10.5	10.6	9.1	10	9.4	.....	10	10.1	9.2	.....
Missouri	12.1	9.9	12.3	10	9.2	8.8	.....	11.3	6.3	9.2	.....
Illinois	11.9	9.2	11.6	9.6	9.7	7.9	.....	8.9	8.8	8	.....
Indiana	10.9	9.5	11.9	10.1	.....	10.2	.....	10.5	9.3	8.7	10.4
Ohio	10.4	8.5	11.9	9.7	.....	8.9	.....	9.1	12	9.1	.....
Michigan	11	8.8	12.2	9.8	.....	8.1	.....	10.4	12.3	10.1	10
Wisconsin	12.3	9.1	12	8.5	.....	6.9	.....	10.5	.....	10.1	10.9
Minnesota	12.1	10.5	10.3	9.2	.....	8.1	.....	12.1	.....	10.3	11.1
Iowa	11	9.1	11.7	9	.....	8.3	.....	10.3	6	9.8	10
Kansas	12.7	10.1	11.2	10	.....	10.1	.....	11	6.9	9.9	.....
Nebraska .....	.....	.....	11.5	9.5	.....	9.5	.....	12	10	9.8	.....
California	10.3	9.2	9.8	10.5	.....	.....	.....	10.2	7.8	10.2	.....

EXTRACTS FROM CORRESPONDENCE.

CORN.

Cumberland County, Me.—Weather backward for the season; corn backward, and in danger from frost.

Sagadahoc County, Me.—Corn very light, owing to cold and drought.

Kennebec County, Me.—Hundreds of acres of corn must be cut for fodder, the low temperature of the season preventing it from ripening; heavy frost on low grounds early in August.

Sullivan County, N. H.—Corn at least three weeks later than usual, owing to cold, changeable weather; some damage by frost on low lands on the night of August 8; but little rain during the last two months.

Caledonia County, Vt.—The indications are that the corn crop must be a failure; the season has been very cold.

Grand Isle County, Vt.—A very poor prospect for the corn crop, which has been much injured by cut-worms and by cold and wet weather.

Norfolk County, Mass.—Corn is late, and inferior in condition.

Kent County, R. I.—The severe gale of September 8 prostrated all the corn in the county, seriously damaging the grain of that which was not glazed, and also the fodder.

Jefferson County, N. Y.—Corn is backward, and an early frost would cut it down to less than half a crop.

Monroe County, N. Y.—Corn very backward; much of it scarcely set; nothing but a warm, late fall can save it.

Niagara County, N. Y.—There is a prospect of only half the average crop.

Queens County, N. Y.—The excessive wetness of the early part of the season, followed by the opposite extreme, has much diminished the prospect of the corn crop.

Tioga County, N. Y.—Corn is backward.

Burlington County, N. J.—Corn is much injured by severe drought.

Hunterdon County, N. J.—Corn is suffering from prolonged drought and excessive heat; old citizens say that it has been the driest season for forty years; with the exception of a slight shower on the 6th of July, the drought has continued sixty-five days.

Ocean County, N. J.—Corn will fall at least twenty-five per cent. below the usual average, owing to drought.

Beaver County, Pa.—Corn is late and full of weeds, owing to wet weather; if frost keeps off till the first of October more than half the usual crop will be obtained.

Berks County, Pa.—No rain for the last six weeks, and the corn crop will be a short one.

Chester County, Pa.—The crop will be a short one.

Franklin County, Pa.—Corn is suffering somewhat from the very dry weather.

Indiana County, Pa.—The summer, taken as a whole, has been the coldest on record; the corn crop is almost a failure; the cold weather made it small and spindling, and now the drought is finishing it up.

Lancaster County, Pa.—The month of August was very dry; everything parched; corn a small crop; grasshoppers assisting drought in the work of destruction.

Luzerne County, Pa.—A cold summer; much of the corn backward in ripening.

York County, Pa.—The very dry weather of August has materially diminished the corn crop.

Baltimore County, Md.—Corn is parched by the drought.

Cecil County, Md.—The northern portion of the county has been favored with showers, and the corn promises an average crop; in the southern portion scarcely any rain has fallen since June, and on many farms corn will be a total failure; at present it is very dry in all parts of the county.

Prince George County, Md.—Corn was very promising until the 1st of August; after that harsh winds and cold weather, followed by weeks of very hot and dry weather, so changed the prospect that not half an average crop will be made; in some portions of the county there will not be a barrel per acre.

Bath County, Va.—The prospect of the corn crop has been much improved by a few days of rain in the last of August.

Clarke County, Va.—The product of corn has been lessened by the protracted drought which has prevailed throughout the valley of Virginia, though less severe in this county than any other.

Highland County, Va.—Corn is almost an entire failure.

Lancaster County, Va.—The corn crop has been cut short at least four-tenths by the excessive drought.

Loudoun County, Va.—Corn will not be half a crop.

Nelson County, Va.—Generally speaking, this is a fine section for corn, but the cold, wet spring, and the dry weather of July and August, have been unusually destructive; on some of the upland farms corn is an utter failure.

Madison County, Va.—Corn on hill lands and sand bars is dried up; grasshoppers, no longer able to subsist on pasture, are attacking corn-fields.

Smyth County, Va.—Corn is nearly ruined by the long drought.

Spottsylvania County, Va.—Not a fourth of a crop can be realized.

Brooke County, West Va.—Corn will be nearly an average crop, though somewhat injured by drought.

Harrison County, West Va.—Corn will not be more than an average crop. Owing to wet weather in the early part of the season corn could not be properly worked. Late corn has been seriously injured by several days of very dry weather.

Kanawha County, West Va.—Corn is cut short considerably by drought, especially late planted.

Monongahela County, West Va.—A good crop.

Monroe County, West Va.—In one-half of the county there will be but half a crop, owing to drought. In the rest of the county there will probably be a good crop.

Morgan County, West Va.—Corn will not average half a crop.

Alamance County, N. C.—The corn crop is the worst ever known here.

Burke County, N. C.—Much of the upland corn is past recovery. On bottom lands there is still prospect of a good crop.

Beaufort County, N. C.—Corn is very promising; but that planted late is suffering from want of rain.

Caswell County, N. C.—Corn is much injured by drought.

Currituck County, N. C.—Notwithstanding some injury from the severe drought, corn promises a heavy yield.

Davidson County, N. C.—By reason of the drought there will probably be less than half a crop.

Chester County, S. C.—Corn is cut off by the intense heat.

Chattahoochee County, Ga.—The corn crop is tolerably good.

Jackson County, Ga.—A very poor crop. A continuous drought for three months.

Pulaski County, Ga.—Corn will average one-tenth more than last year.
Greene County, Ala.—Early corn was seriously injured by drought in July.

Coahoma County, Miss.—In many parts of the county corn has been much injured by drought.

Lee County, Miss.—The corn crop is excellent.

Yalabusha County, Miss.—Notwithstanding early planted corn made but half a crop, the late planted did well, and the total average will exhibit a very good crop.

Winn Parish, La.—Corn is unusually good.

Caldwell Parish, La.—Corn is good; a larger acreage than usual.

Fannin County, Texas.—Corn is now matured; the crop is larger than ever before.

Forsyth County, Tenn.—The long-continued drought has seriously damaged corn, except on bottoms, where there is a fair average.

Greene County, Tenn.—The season throughout has been very unfavorable for corn—too wet until June, and too dry since that time. The crop is ruined beyond hope. There is promise of an abundant mast, which must serve the purpose of fattening hogs.

Knox County, Tenn.—Corn parched nearly dry; not enough for home consumption.

Marion County, Tenn.—Our correspondent writes: "The corn crop is nearly a failure. Within a few days I have been up the Tennessee River one hundred miles. Corn, off the river bottoms, will give ten bushels per acre. I saw thousands of acres that will not return the seed."

Pulaski County, Ky.—On uplands corn has been cut very short by drought.

Scott County, Ky.—Corn has been diminished at least one-tenth by drought.

Trimble County, Ky.—The crop will fall short one-quarter to one-half.

Athens County, Ohio.—Suffering from severe drought; not more than half a crop is anticipated; poor corn, shriveled in the ear.

Medina County, Ohio.—Corn is doing finely, and it is hoped there will be an average yield.

Montgomery County, Ohio.—The crop will be cut short twenty-five per cent.

Montcalm County, Mich.—Corn indicates two-thirds of a crop.

Ottawa County, Mich.—Corn is very late and poor. August has proved as wet as the two previous months. All hoed crops are full of grass and weeds.

Van Buren County, Mich.—Corn has been killed on low grounds by excess of water. There will not be more than two-thirds of a crop of good corn.

Bartholomew County, Ind.—Corn was injured to some extent by dry weather in the first part of August, but will make an average crop.

Elkhart County, Ind.—Corn was never before so nearly a failure. Four-fifths of the crop drowned out and abandoned.

Franklin County, Ind.—The corn crop is very poor, chiefly in consequence of drought following extremely wet weather; partly, as it is believed, to a white grub preying on the roots. There seems to be a singular deficiency of root.

Lee County, Ill.—A poor prospect for corn.

Mercer County, Ill.—Corn is late and injured by wet.

Sangamon County, Ill.—Corn is doing well, and it is hoped that there will be nearly an average crop.

Morgan County, Ill.—It is believed that the crop will considerably exceed that of last year.

Williamson County, Ill.—The wet spring, late planting, and subsequent drought, together with the weeds which had obtained secure footing during the continued rains, will diminish the corn crop at least one-fifth below that of last year.

Green County, Wis.—The prospect for corn has improved. If frost holds off till the first of October there will be an average crop.

Richland County, Wis.—Corn is very backward and small.

Walworth County, Wis.—Corn will not exceed sixty per cent. of last year's yield.

Des Moines County, Iowa.—Corn will not make one-fourth of a crop.

Johnson County, Iowa.—Corn is maturing well.

Harrison County, Iowa.—Corn is more heavily loaded than ever known in this county. Almost every stalk has two ears. If the frost holds off, shall expect a large crop.

Lee County, Iowa.—Thousands of acres of corn are not worth harvesting, in consequence of the wet weather.

Franklin County, Mo.—Corn is twenty-five per cent. better than in 1868.

Johnson County, Mo.—An immense crop, except in low places where it was too wet to be worked in the first part of the season.

St. Louis County, Mo.—Corn is ten days late, but if frost holds off till the last week of September there will be a full crop.

Arkansas County, Ark.—Corn has been seriously damaged by overflow and subsequent drought, but enough will be saved to supply the county.

Columbia County, Ark.—The corn crop is safe, and better than an average.

Independence County, Ark.—Six weeks of drought and extreme heat have reduced the crop fifty per cent. below an average.

Atchison County, Kan.—Corn has done well since the departure of the grasshoppers.

Cuming County, Neb.—Corn is an average crop. The season has been very wet.

Merrick County, Neb.—A wet season. Corn on low grounds is late; some fields have been abandoned to weeds.

COTTON.

Beaufort County, N. C.—Much of the cotton having been planted late, is not well balled, and is now shedding to some extent.

Duplin County, N. C.—August has been unfavorable for cotton. The cold nights in the early part of the month checked it and caused the plant to shed its forms rapidly, and subsequent drought has also injured the growth. Rust has appeared within a few days and is spreading fast.

Edgecombe County, N. C.—Damaged by drought.

Harnett County, N. C.—A very bad stand of cotton, but showing better condition than expected in the spring.

Sampson County, N. C.—Suffering badly from drought.

Chester County, S. C.—The intense heat has had a most disastrous effect on crops, and has caused cotton to shed the young bolls and forms.

Orangeburg County, S. C.—All crops have suffered from drought. A large amount of commercial fertilizers has been used on cotton, which has done better in consequence.

Richland County, S. C.—The upland cotton has been much injured by

the late drought, but that on the river swamp and low lands is now in splendid condition, and can be injured only by a wet fall.

Union County, S. C.—The drought has damaged cotton very much. August 29th a rain occurred, appearing to be general through this region.

Brooks County, Ga.—Cotton badly damaged and cut off by caterpillars, boll worms, and rust. It has shed its forms to an unusual extent, owing to rains about the first of August.

Butts County, Ga.—The extremes which have characterized the weather of this year have affected cotton unfavorably, and the dry, hot weather which has prevailed of late has caused the young bolls and forms to drop off.

Carroll County, Ga.—Cotton is seriously injured by rust.

Columbia County, Ga.—Since the July report cotton has fallen off at least three-tenths, in consequence of the dry, hot weather.

Glynn County, Ga.—Caterpillars appeared in cotton fields about the 15th of August. On the low lands corn has suffered; but on high, dry lands not much injury has been done.

Taylor County, Ga.—Cotton will not be more than half a crop. The dry and extremely hot weather has caused it to open much faster than usual, and the crop in this county will be ready for market at least a month earlier than usual.

Leon County, Fla.—Cotton is much injured by repeated rains in July, and by rust. Caterpillars have appeared in force on several plantations, and are likely to prove very destructive to cotton throughout the county. Yet the damage from this cause will be less than from those first mentioned.

Bradford County, Fla.—The recent fine prospect of cotton is likely to be ruined by the caterpillar.

Clarke County, Ala.—The weather is very hot and injurious to cotton picking. Fertilized cotton is rusting, though much earlier in maturing, and giving an increase of two hundred per cent. in yield on old lands. Caterpillars, so far, have done little damage.

Macon County, Ala.—The cotton prospect has greatly diminished since August. Caterpillars made their appearance about the middle of July. They have done great damage, and are rapidly increasing.

Dallas County, Ala.—Cotton has deteriorated twenty per cent. during the last half of August. Wide-spread injury from boll worm and shedding of forms.

Greene County, Ala.—Cotton is doing very well. The worm has not yet appeared, and, unless it does so soon, the yield will be very large.

Bolivar County, Miss.—The long drought has caused cotton to shed to a large extent.

Coahoma County, Miss.—Cotton on sandy lands has suffered from drought, but on the stiff, heavy lands promises a splendid yield.

Lee County, Miss.—The cotton crop will be fifty per cent. greater than in 1868. A short drought in August caused some shedding of forms, but the prospect is again encouraging.

Pike County, Miss.—The fields look well, but we are having too much rain; and as cotton is two or three weeks late, it will be badly injured by frost, unless we have a late fall.

Warren County, Miss.—Cotton picking commenced August 20.

Yalabusha County, Miss.—The season is all that could be desired, and the prospect is very favorable.

Caldwell Parish, La.—The cotton crop is much better than in 1868. Though somewhat impaired by recent dry weather, there will be as

much as can be gathered. Laborers have been working better than last year, "but," says the correspondent, "we have not one-fourth the number needed." Fertilizers and improved seed have been used with success. About one bale of cotton per acre will be gathered.

Carroll Parish, La.—The army worm made its first appearance in this county August 9, ten days earlier than last year. It is hoped, however, that, as then, no material injury will result.

St. Helena Parish, La.—It is feared that the hitherto excellent prospect will be seriously injured by the current excess of rain.

Colorado County, Texas.—The yield will considerably exceed that of last year. The recent overflow of the Colorado River destroyed about five thousand bales in this county, and the loss throughout the river valley will probably be in similar proportion. Picking is going on.

Lavaca County, Texas.—Cotton has been hitherto very promising, but the worms, appearing about the middle of August, have stripped the fields, and only one-third of a crop is expected.

Smith County, Texas.—Cotton has suffered greatly of late for want of rain. In some instances lately planting there has been almost an entire failure.

Giles County, Tenn.—There will not be half a crop of cotton in this county.

Arkansas County, Ark.—The cotton crop will be reduced twenty per cent. below that of last year by overflow and subsequent drought.

Independence County, Ark.—Cotton has been greatly damaged by drought and extreme heat.

WHEAT.

Grand Isle County, Vt.—The wheat crop is heavy and of good quality.

Jefferson County, N. Y.—Late sown spring wheat has been injured to some extent by the midge, while winter wheat and early sown spring wheat have entirely escaped the insect.

Sussex County, N. J.—Wheat has been harvested in excellent condition.

Berks County, Pa.—The wheat crop is heavy, and of the best quality.

Franklin County, Pa.—Wheat was harvested in fine condition; the best crop cut for several years.

Baltimore County, Md.—Wheat has been harvested in excellent condition.

Cecil County, Md.—The wheat crop will average low.

Clarke County, Va.—A very good crop and of good quality.

Spottsylvania County, Va.—The yield of wheat far better than last year.

Harrison County, West Va.—Wheat was harvested in tolerable condition and appears to be turning out well.

Monongahela County, West Va.—Best crop for ten years.

Monroe County, West Va.—Wheat has been harvested in better condition than for years.

Putnam County, West Va.—The yield of wheat greatly disappointed expectation, and it was damaged after cutting by continuous wet weather.

Forsyth County, N. C.—The wheat crop is excellent.

Rockingham County, N. C.—The correspondent writes: "The wheat crop is a good one and is all that will save us from extreme suffering. We have not had such a drought since 1845."

Hawkins County, Tenn.—After threshing, the smooth wheats are gene-

rally found shrunken and full of smut. The bearded are generally good and free from smut.

Robertson County, Tenn.—Unusually dry weather since July 10th. Wheat has been housed and stacked in superior condition.

Rutherford County, Tenn.—Wheat has been injured twenty per cent. in condition by smut and bad handling; more smut than for many years. The average yield per acre was about seven and a half bushels.

Lincoln County, Ky.—Wheat generally threshed in good condition.

Trimble County, Ky.—The wheat crop in this county is unusually fine.

Athens County, Ohio.—Wheat is rusted in many places, but there is more than an average yield.

Geauga County, Ohio.—The best crop for many years.

Miami County, Ohio.—A larger amount per acre has been harvested than ever before. The quality is excellent. Price, \$1 15 to \$1 40.

Logan County, Ohio.—The area sown was thirty per cent. above that of last harvest. The product was of superior quality.

Bartholomew County, Ind.—The crop of wheat is stated at double the amount ever harvested before. The quality excellent.

Kosciusko County, Ind.—The greatest yield known for many years, but the condition when harvested was below an average in consequence of wet weather.

Franklin County, Ind.—Wheat will average twenty bushels per acre, the quality very excellent. A large amount is being sold, generally at \$1 10 to \$1 20.

Warren County, Ind.—Winter wheat will probably average seventeen bushels per acre, which is considered a good yield in view of the wet season. Spring wheat is worth nothing.

Morgan County, Ill.—Spring wheat is very poor. Taken as a whole the wheat crop will average perhaps about the same as last year.

Mercer County, Ill.—Wheat light and wet.

Sangamon County, Ill.—Spring wheat being almost an entire failure will reduce the average of the entire crop.

Williamson County, Ill.—The wheat crop is better than for several years.

Knox County, Ill.—Much wheat spoiled in the shock.

Green Lake County, Wis.—Wheat was in good condition when harvested, but is going into the stack in quite too moist a state.

Portage County, Wis.—Wheat was harvested in good condition.

Carver County, Minn.—The wheat crop in this county is very abundant; the best for several years.

Stearns County, Minn.—Wheat is not wholly harvested, and the harvest is being retarded by wet weather. But little damage has yet been done.

Wabasha County, Minn.—Wheat is a large crop. Blight, however, has done some injury.

Des Moines County, Iowa.—But little of the spring wheat will be fit for flour. Fall wheat is damaged by sprouting.

Johnson County, Iowa.—Wheat was excellent when harvested, but driving rains have injured it in shock and stack, causing great loss.

Lee County, Iowa.—Large quantities rotted in the stack.

Franklin County, Mo.—The wheat crop is much superior to that of 1868.

Johnson County, Mo.—The acreage of wheat was far greater than last year, but the average per acre was smaller, and the quality not as good.

Montgomery County, Ark.—The best crop of wheat that has been had for fifteen years.

St Francis County, Ark.—The wheat crop is exceedingly light.

Riley County, Kans.—An unusually large acreage and heavy yield.

Dakota County, Neb.—An excellent crop, but injured in stacks by the wet weather.

Kane County, Utah.—Wheat is almost a failure, in consequence of grasshoppers attacking it while in the milk.

Santa Clara County, California.—Half of the wheat crop is shrunken and of inferior quality. Most of the damage was caused by rust.

Marion County, Oregon.—A severe drought. All early sown grain, well planted, is good beyond expectation, while late sown is very poor. "This," says the correspondent, "may teach our people to plow deep, pulverize well, and sow grain at the proper time." Wheat firm at 70 cents per 60 pounds.

OATS.

Coos County, N. H.—A heavy yield.

Grand Isle County, Vt.—A good crop.

Sussex County, N. J.—The crop is excellent in quality.

Indiana County, Pa.—A large crop and of excellent quality.

Baltimore County, Md.—Oats were harvested in excellent condition.

King George County, Va.—Not a full crop, and the grain very light in weight.

Harrison County, Va.—In quantity and quality the crop was never better.

Athens County, O.—The crop is excellent, especially early oats.

Geauga County, O.—An unusually excellent crop.

Montcalm County, Mich.—Oats are in unusually bad condition. About one-half of the crop damaged by being stacked in a wet state.

Lee County, Ill.—A large yield. Large quantities not yet stacked in consequence of wet weather.

Knox County, Ill.—A very heavy yield, but much of it damaged before it was stacked.

Williamson County, Ill.—An excellent crop both in quantity and quality.

Moniteau County, Mo.—The finest crop of oats ever harvested in this county.

Riley County, Kans.—An increased acreage and a heavy yield.

Cuming County, Neb.—Oats have been harvested in excellent condition.

POTATOES.

Norfolk County, Mass.—Potatoes promise well, but there are indications of rot.

Jefferson County, N. Y.—Potatoes look healthy and a large crop may be expected.

Niagara County, N. Y.—A very large yield, but rotting badly.

Ontario County, N. Y.—A good crop. There is some rot in wet grounds.

Burlington County, N. J.—Potatoes are of very superior quality.

Adams County, Pa.—Potatoes much injured by the drought.

Beaver County, Pa.—An average crop.

Berks County, Pa.—Early planted potatoes are large and free from rot.

Cambria County, Pa.—Potatoes are rotting.

Chester County, Pa.—Early potatoes are a good crop and in excellent condition. Late planted potatoes must yield a short crop.

Indiana County, Pa.—The potato crop has been diminished by the drought, but is of excellent quality.

Harford County, Md.—Late potatoes greatly injured by drought.

Montgomery County, Md.—The crop is cut short by drought.

Queen Anne County, Md.—Drought and potato bugs have almost destroyed the Irish potato crop.

Clarke County, Va.—The product has been diminished by drought.

King George County, Va.—Potatoes are very unpromising.

Louisa County, Va.—Potatoes are an utter failure.

Kanawha County, West Va.—Potatoes will be a short crop.

Preston County, West Va.—Potatoes are rotting badly.

Athens County, O.—Early potatoes are good. Late potatoes a very light crop.

Medina County, O.—Potatoes are unusually excellent.

Ottawa County, Mich.—Rot is prevailing among potatoes.

Warren County, Ind.—The prospect is that there will be a large crop of potatoes. The bug, heretofore so destructive, has not yet appeared.

Knox County, Ill.—Potatoes would have given a larger crop than for many years had it not been for rot.

Moultrie County, Ill.—The potato crop is unusually good.

Green Lake County, Wis.—A splendid crop; the best for years.

Wabasha County, Minn.—Complaint is made of potato rot. The weather has been very wet.

Johnson County, Iowa.—A large yield, but showing indications of rot.

Muscatine County, Iowa.—Potatoes are badly injured by rot.

Johnson County, Mo.—Potatoes are very abundant.

Mercer County, Mo.—Potatoes are excellent.

Riley County, Kan.—A large acreage and heavy yield.

Cuming County, Neb.—The best potato crop that has been had for ten years.

HAY.

Sagadahoc County, Me.—An average crop and of unusually good quality.

Orleans County, Vt.—Much of the first crop was light, but the wet weather has caused a large crop of rowen on meadows; on the whole, about the same quantity of hay as last year.

Norfolk County, Mass.—The crop is somewhat below the average in quantity, but is of superior quality.

Burlington County, N. J.—Pastures are very much injured by drought.

Gloucester County, N. J.—Pastures are almost entirely burned up by the drought.

Hunterdon County, N. J.—Pasturage has been wholly ruined by the long drought and hot weather.

Beaver County, Pa.—July being very wet, little grass was cut until August; timothy was put up in very good order; clover was too ripe, or, if cut at the right time, was spoiled by rain.

Berks County, Pa.—Pasture scarce on account of drought and grasshoppers, and many farmers are feeding hay to their cattle.

Indiana County, Pa.—The hay crop has been secured in good order, and is excellent in quality.

Lancaster County, Pa.—Scarcely any clover seed has been made, on account of the ravages of grasshoppers.

Baltimore County, Md.—The hay crop is in amount about one-tenth below the average, and is of excellent quality.

Montgomery County, Md.—Pastures are very short, and many streams dry or very low.

Prince George County, Md.—Pastures are burned up and very bare.

Loudoun County, Va.—The pastures are badly parched, and the young grass burned out or eaten by grasshoppers.

Harrison County, West Va.—The product of hay was probably never so great in this section of the country.

Monongahela County, West Va.—An abundant crop of grass.

Pickens County, Ga.—The hay crop will be short; exceedingly hot and dry weather during August.

Rutherford County, Tenn.—Clover, which usually affords a good fall crop of hay, is already as dry as it would ordinarily be ten days after frost.

Robertson County, Tenn.—Owing to the prolonged dry weather, hay has been put up in extra condition.

Knox County, Ill.—The hay crop was unusually heavy, but much of it was spoiled by rains after being cut.

McLeod County, Minn.—The crop of hay in this county is limited only by the ability of the farmers to cut it; the native grasses are superior to timothy and clover.

Johnson County, Iowa.—Hay and pasture are excellent.

Marshall County, Iowa.—Timothy hay, generally, is spoiled by rains.

Benton County, Mo.—Hay of all kinds except Hungarian is very good, timothy is unusually heavy; a great deal of prairie grass is cut, quite nutritious for stock.

Columbia County, Oregon.—Our hay crop of June grasses falls short at least three-tenths, while the wild or swamp grass yields one-fifth more than usual; this wild grass, consisting of wild red-top and blue-joint, and wild pea-vine, when cut at the proper time, is considered, by some dairymen, equal to timothy; it yields about three tons per acre.

FRUIT.

Kent County, R. I.—The gale of September 8 shook off all the apples, uprooted trees, &c.

Niagara County, N. Y.—Peaches are excellent; a large crop of fruit, ripening well.

Ontario County, N. Y.—The peach trees are heavily loaded.

Hunterdon County, N. J.—The peach crop is nearly a failure.

Allegheny County, Pa.—Apples will not yield a full crop, but are of good quality; grapes are rotting badly.

Berks County, Pa.—A larger number of apples than usual, the fruit being of unusual size and extra quality; peaches are unusually abundant.

Franklin County, Pa.—With the exception of apples, fruit was never so abundant.

Lehigh County, Pa.—There was a fair prospect for a large crop of peaches, but the most of them have been shrivelled by the drought and do not ripen.

Baltimore County, Md.—Fruit of all kinds very abundant.

Louisa County, Va.—Fruit is all falling off; even the forest and yard trees are dying from drought.

Preston County, West Va.—Fruit of all kinds was never more abundant.

Monongahela County, West Va.—A large crop of apples and peaches.

Campbell County, Ga.—Apples and peaches were injured this year by worms to a greater extent than ever before.

Pickens County, Ga.—The fruit crop almost a failure in most parts of the country.

Jefferson County, Miss.—Apples and pears are plentiful; peaches very scarce and wormy.

Putnam County, Fla.—The orange crop of this year will be far above the average, notwithstanding the severe freeze of last Christmas.

Butler County, Ohio.—A plentiful crop of peaches.

Lorain County, Ohio.—Catawba grapes are rotting badly; apples are very wormy and are falling off.

Portage County, Ohio.—Apples nearly all dropped off in July; the balance very wormy.

Calhoun County, Mich.—Grapes set very full, but turned black and dropped off; Catawbas badly, on old vines much more than on new. Delawares and Hartford Prolifics were not affected.

Hancock County, Ill.—The grape crop almost a failure, on account of excessive rains; the Catawba suffers most.

Green Lake County, Wis.—Apples are very fine, and a full crop. Grapes in general are doing well; the Clinton is rotting to some extent.

Goodhue County, Minn.—Many young orchards are bearing well. The prospect for successful apple culture is more encouraging than heretofore.

Benton County, Mo.—The peach crop is a failure in this section.

Franklin County, Mo.—Grapes, apples, and peaches are very fine.

St. Louis County, Mo.—Grapes have rotted badly, in consequence of the unusually wet summer; two-thirds of a crop, and of inferior quality.

Crawford County, Ark.—The apple crop is ruined by the intense heat, and is rotting. Grapes are rotting badly, and the peach crop is very poor.

Jackson County, Kan.—All fruit trees, old enough to bear, are doing well; pears in particular. Grapes have done well.

Douglas County, Col.—Apples, pears, peaches, and grapes are all too young to bear, but are thrifty, and give promise of future success.

Sacramento County, Cal.—A hot north wind on the last Sunday in June burned the fruit crop badly; grapes suffered about one-third.

Tuolumne County, Cal.—Grapes have been much injured by mildew, supposed to be occasioned by late rains. Peaches have been injured by curled leaf and apples by overbearing last year.

HOGS.

Georgetown County, S. C.—Cholera among hogs is very destructive.

Macon County, Ga.—A disease has appeared among hogs, proving fatal in many cases; its nature has not been definitely ascertained.

Newton County, Ga.—A few cases of hog cholera.

Warren County, Miss.—A disease among the hogs in the upper part of the county; it is fatal to nine-tenths of those attacked.

Kenton County, Ky.—Nearly all the stock hogs in this county will be sold this year without feeding.

Lincoln County, Ky.—Hog cholera has prevailed to a considerable extent.

Franklin County, Ind.—The prospect now is that hogs will be sent to market badly fattened, and in less number than had been anticipated. Stock hogs sell for eight cents gross, with little demand.

Lee County, Iowa.—Cholera among hogs; more fatal than usual.

Pike County, Mo.—Only a very few lots of hogs will be fatted in this county. Corn selling at one dollar per bushel.

Cross County, Ark.—Cholera among hogs has reduced the stock considerably.

OTHER CROPS.

Sagadahoc County, Me.—The grain crop, with the exception of corn, is unusually good.

Addison County, Vt.—Crops unusually excellent, with the exception of corn and apples.

Orleans County, Vt.—A very large growth of all kinds of grain, excepting corn.

Erie County, N. Y.—Crops at least ten days later than usual. The season has been cold and wet beyond the experience of many years.

Jefferson County, N. Y.—All grain crops, excepting corn, harvested in good condition.

Morris County, N. J.—Much injury from drought.

Sussex County, N. J.—Buckwheat is much injured by drought. Rye is excellent in quality.

Adams County, Pa.—The late crops are injured considerably by the drought.

Allegheny County, Pa.—Better crops than for twenty years past.

Bucks County, Pa.—Severe drought. The young buckwheat is parched up in many places.

Lehigh County, Pa.—All growing vegetables suffer greatly from the drought.

Indiana County, Pa.—The unusually cold summer has affected some crops quite injuriously. The weather for the past ten days has been hot, and has almost completed the ruin of the buckwheat, which has turned brown and has not yet filled.

Allegany County, Md.—But little rain has fallen during August, and crops have suffered.

Baltimore County, Md.—Rye has been harvested in excellent condition.

Howard County, Md.—Crops in general will average low. The drought has been one of the most afflicting ever known. For months there have been but one or two rains, and these have produced very little effect on vegetation. The ground remains too hard to plow for wheat; seed time is fast approaching, and the prospect for an average acreage is very poor.

Montgomery County, Md.—Tobacco is cut short by drought, and some will never be housed.

Prince George County, Md.—Tobacco is much injured by the hot, dry weather.

Bedford County, Va.—All crops except wheat have been greatly injured by the long drought.

Chesterfield County, Va.—The correspondent writes that "the long continued drought has reduced us to the verge of famine," and that much suffering among the citizens is likely to ensue. The drought commenced the first of June. August 30 a rain wet the land nearly two inches.

Gloucester County, Va.—No stand of turnips nor of late vegetables.

Amelia County, Va.—Our staple crops are entirely destroyed. Throughout this southern portion of the State, so far as heard from, there has been a drought of over nine weeks' duration. Gardens burned up; tobacco, generally speaking, but little larger than when planted. Great suffering must ensue next year for want of food supplies.

King George County, Va.—Rye not a full crop and very light in weight.

Vegetables generally, excepting potatoes, matured before the severity of the drought affected them.

Louisa County, Va.—The prospect a most gloomy one. Tobacco hardly visible at the distance of a hundred yards.

Morgan County, West Va.—The buckwheat crop will be one-third less than an average.

Monongahela County, West Va.—All crops are the most abundant known for fifteen years.

Alamance County, N. C.—Crops have suffered greatly by the drought.

Caswell County, N. C.—Throughout this and the adjoining counties the drought has seriously injured the tobacco crop.

Chatham County, N. C.—Crops are almost entirely destroyed by drought.

Georgetown County, S. C.—The drought still continues. All the smaller water courses perfectly dry, and rivers very low. Gardens are burned up, and all field crops damaged, excepting rice, which has improved and promises an average of twenty-five to twenty-eight bushels per acre. The average before the war was thirty-five to forty bushels.

Heard County, Ga.—Crops are decidedly better in this county than they were last year.

Liberty County, Ga.—There is a good acreage of rice, and its condition is unusually excellent. On the seaboard thousands of watermelons were raised this year, and from them a fine sirup was made.

Glynn County, Ga.—The rice crop is more than an average. Harvest now going on.

Pulaski County, Ga.—Sugar cane is doing well.

White County, Ga.—Crops are suffering severely from drought. Much discouragement exists.

Volusia County, Fla.—The year has been remarkable for drought, especially on the Atlantic side. All crops have suffered severely.

Montgomery County, Tenn.—So far the prospect for tobacco is a poor one.

Robertson County, Tenn.—Tobacco will not average more than half a crop in this county.

Trimble County, Ky.—Tobacco never looked better, notwithstanding the dry weather.

Ottawa County, Mich.—Farm crops and garden vegetables have suffered from long continued wet weather.

Johnson County, Iowa.—An excellent crop of rye and barley, but injured after harvesting by driving rains.

Riley County, Kansas.—An increased acreage of rye and barley and a heavy yield. Seasonable rains in August have been favorable to all growing crops.

Yankton County, Dakota.—Crops of all kinds are better than were ever known before.

Santa Clara County, California.—The barley crop is an average and of excellent quality.

NOTES ON THE AGRICULTURE OF NORTHERN COLORADO.

SIR: Having been attached to Dr. F. V. Hayden's United States Geological Expedition to Colorado and New Mexico, it was made a part of my duty to collect notes in regard to the agriculture of the country through which we should pass.

The mountainous districts being the chief points of attraction to the expedition, necessarily restricted my personal observations to the small portions of arable land we traversed in moving from point to point where entrances to the mountains could be obtained. Yet these slight opportunities have been sufficient to convince me that Colorado is far from being destitute of interest in an agricultural point of view.

All who are to the least extent acquainted with this country are aware that from the summit of the eastern range of mountains there is a continuous descending slope toward the Missouri River. This descent decreases from the precipitous slope of the immediate mountain side until it is lost in the apparent level of the vast plains.

As might readily be imagined from this configuration, the streams which take their rise in the mountains east of the great divide run nearly an east course.

The first debris and also the heavier portions brought down from the mountains are, as a matter of course, deposited near the base. Hence, as we recede from this point eastward, this local drift of boulders, pebbles, and coarse sand decreases in the size of its particles, as well as in thickness of deposit. Over this is deposited the alluvial stratum forming the soil, which, close to the base of the mountain, covers very thinly the boulder deposit, but increases in thickness toward the east. The creeks rushing down more rapidly near the mountains cut deeper furrows through this deposit near the mountain base than at a distance from it. And in consequence of this, the terraces or ridges which lie between the streams are higher above the water near the mountain, and decrease as they recede from it. This fact, in other parts of our country, might have very little bearing upon agriculture, but here it becomes a consideration of vital moment to the farmer, who must irrigate his land, or receive but little return for his labor.

The arable portion of the Territory is naturally divided into three quite distinct and separate districts, which may be more advantageously considered separately.

First. That portion lying east of the Rocky Mountains and north of the divide between the waters of the South Platte and the waters of the Arkansas, embracing a distance north and south of about one hundred and thirty miles—estimating from the north side of Cache à Poudre Valley, as the northern limit.

Second. The second district includes that part watered by the Arkansas and its tributaries; bounded on the north by the divide before mentioned, and on the southwest by the Raton Mountains.

Third. The San Luis Park, a complete system within itself, the waters of which find an outlet through the Rio Grande, or are lost in Sawatch Lake.

The three great districts corresponding to the three streams through which their waters find an outlet to the Gulf of Mexico. As might be supposed from this prominent fact, we cannot investigate the agricultural capacity of this portion of the Territory by such arbitrary lines as those established by the surveyor; but must, if we expect to understand the country, follow the natural arrangement of streams and valleys. This applies not only to the large districts, but is found, also, to be true when we descend to the more minute divisions of the separate districts.

THE DENVER DISTRICT.

The first, which we will denominate the "Denver district," is composed of a series of valleys, each watered by its own stream, and the

ridges which lie between them. This district is naturally divided into two sections: the first including the territory lying north of the South Platte, and between it and the mountains; the other included between the Platte and the divide.*

The first section is divided into some ten or twelve valleys, which run eastward until uniting with each other, or lost in the valley of the Platte. The latter stream, leaving the mountains some twenty miles southwest of Denver, after bowing out a short distance on the plains, runs northeast, slightly diverging from a parallel with the east range, for a distance of about eighty miles, where it is joined by the Cache à Poudre, and then turns eastward.

The portion of country north of the Cache à Poudre valley, although affording good pasturage for cattle and sheep, is not generally in the estimate of arable land, on account of its lack of irrigating facilities. Yet the bottoms which flank Box Elder Creek will afford room for several good farms and ranches, as headquarters for herds and herders.

We begin, then, at the northern limit of our section, with the Cache à Poudre, some seventy or eighty miles north of Denver, and descending south describe the valleys according to the streams which water them. This stream, from the point where it issues from the mountains, near La Porte, to its junction with the Platte, a distance of thirty or thirty-five miles, runs through a fertile valley of moderate width; it is some twenty-five yards in width on an average, affording an abundant supply of water, and sufficient descent to irrigate the bottoms and terraces or ridges which border it.

The next stream is the Big Thompson, which runs eastward nearly thirty miles, and also empties into the South Platte. The valley it waters is similar to that of the Cache à Poudre, and the volume of water about the same as the latter.

The third is the Little Thompson, a tributary of the Big Thompson but, as this creek is liable to fail in its supply of water during the summer, it cannot be relied upon for irrigation, though its valley affords excellent pasturage for stock, and will furnish a good range for cattle and sheep when the neighboring valleys become thickly settled and fenced.

Moving south, the next stream we cross is the St. Vrain, nearly equal in its volume of water to the Big Thompson. This runs through a pretty valley to its junction with the Platte, a distance of twenty-five miles.

Left Hand Creek, a tributary of St. Vrain, affords a small valley about eleven miles long.

Boulder Creek, which is the next, issuing from the mountains at Boulder City, after running somewhat northeast for eighteen miles, unites with the St. Vrain. Some of the finest farming and grazing lands north of Denver are found along this stream. At its debouchure from the mountain gorge are gathered heavy deposits of boulders and pebbles, from which, doubtless, the creek and city have received their names. A narrow growth of willow and cottonwood lines its banks. Its bottom, at points, widens out to considerable extent.

Moving southward, with the snow-clad peaks looming up to our right, we next arrive at South Boulder, which, leaving the mountains near Marshall's coal mine, runs a circuit of about eight miles and unites with the Boulder. Here is found the connecting link which unites the agriculture of the plains with the mining of the mountains.

* The divide is a broad ridge rising two thousand feet above the plain, which starting from the foot of the mountain, extends eastward.

Standing on the grass-covered bluff overlooking this little limpid stream, the eye, as it shoots out its glance north and east over the plains, wearies itself in attempting to mark the boundary of vision. The valleys over which we have passed, like dim lines, are traced across the broad expanse. Rounded ridges, level terraces, straight foot-hills with green escarpments and isolated buttes, fill up the outline. Sinking into the bluff we pass alternate strata of iron ore and coal. Here they quietly rest, rich, thick, and abundant—the fuel and the metal; the one to convert the other into instruments to till the soil, to harvest the grain, to garner it, to convert it into food, to make the highway to carry it to the miners of the mountains and the snow-bound inhabitants of the north. Such a combination is seldom seen.

Descending from our elevated position and continuing our course southward, after passing some minor streams we reach Coal Creek, also a tributary of Boulder. This is not an unfailing stream, and hence its valley cannot be depended upon for farming purposes.

Clear Creek, which passes within four miles of Denver, gives a valley of eighteen miles before it empties into the South Platte. It is already lined with well-cultivated farms and comfortable ranches, from which the Denver market is in part supplied with grain, vegetables, and meat.

Finally we reach Bear Creek, the last of the series, which, after a short run of ten miles from the mountains, pours its waters into the South Platte.

A short distance below this we arrive at the apex of the triangle formed by the mountains on one side, the South Platte on the other, and the Cache à Poudre as the base; containing, including the Platte Valley, about eight hundred thousand acres of land. Of this amount about one-third is bottom land, the remainder forming the ridges and terraces which lie between the valleys. The greater portion of this entire triangular section is susceptible of cultivation, and the remainder is well adapted to grazing purposes.

The bottoms along these creeks vary from one-half a mile to four miles in width, giving perhaps an average width of two or two and a half miles. Between these valleys are the more elevated portions forming sometimes rounded ridges, at others regular terraces or rolling prairies, but seldom rising to abrupt hills. They vary in elevation above the creeks from a few feet out on the plains to from thirty to fifty near the mountains, and are generally in reach of water sufficient for irrigation.

SOIL.

The soil throughout this section presents great uniformity in regard to quality, being chiefly a light loam, in which the silicious and micaceous ingredients predominate. To form a correct idea of this soil it must be remembered that the streams, in passing from the snow-clad crests of the vast range of mountains to the broad prairies of the plains, sweep over the upheaved margins of the entire geological series of this region; and as they vanish down the mountain gorges and along the rocky cañons, they bear away with them the debris from all the water they touch, from the primary granite to the most recent tertiary representative, mingling and scattering it over the plains they cross. The atmospheric currents, driving to and fro the lighter dry particles, assist in the mingling process. This commingling of the various mineral elements adapts the soil to the growth of a large variety of

plants. It varies considerably in depth; near the foot of the mountains, where the water travels more rapidly, often merely covering the boulders and gravel; further down the valleys it gradually increases in depth. While the bottoms contain a greater proportion of decayed vegetable matter, the ridges and terraces are equally rich in the primary elements, and by irrigation will for cereals become equally productive; and as vegetation ripens upon them eight or ten days earlier than in the bottoms have this advantage.

CLIMATE.

This strip of country, lying longitudinally north and south, necessarily varies in temperature as the points recede from each other; and as we descend from the higher portions along the mountain slope to the valleys of the plains, the isothermal lines bend considerably northward. The average temperature may be compared with that along the eastern slope of the Alleghanies in Pennsylvania, with which it very nearly corresponds.

The altitude reaching from three to seven thousand feet above the level of the sea, and the line of perpetual snow not far distant, the atmosphere is salubrious and remarkably free from miasmatic vapors and impurities. There is often a haziness pervading the air along the mountains, but this in no way affects its purity, as it passes off as the cool of the evening sets in.

In the summer the heat is rather intense during the day, especially in the valleys, where the air is somewhat confined; but on the higher grounds the breezes, which are almost constantly descending from the mountains, render it more pleasant. The air rarefied on the plains rises, while another portion, cooled by the snow on the mountains, sweeps down the slopes and brings with it a refreshing coolness. Considerable rain falls in the early part of summer, and often in very copious showers, yet this but seldom supersedes the necessity of irrigating the land under cultivation. Snow generally begins to fall in October, and ceases in April or about the first of May—sometimes, though rarely, reaching a depth of fourteen or fifteen inches; yet it passes off almost as rapidly as it comes, seldom remaining more than twenty-four hours. Even in the valleys which penetrate the first range this is the case. During some winters but little snow falls, and herded cattle are seldom if ever fed during the entire season, yet they appear in the spring in as good order as those of the States which have been housed and fed day by day. In this respect it is the same with the Mexican horses or broncos, many of which are brought to this part of the Territory.

CEREALS.

Colorado is pre-eminently a mining country, its mineral wealth having recently brought within its bounds most of its present population. Eagerly searching for the glittering riches which lie buried in its rugged mountains, but little attention has been given to the cultivation of the soil, and at present not more than one-eighth of the population is engaged in agricultural pursuits. Therefore the data, from which to draw conclusions in regard to the adaptation of its soil and climate to the growth of any particular cereal, are very meager. Enough is known, however, to justify the opinion that at no distant day that section which has been designated in narratives and on maps as the margin of the "Great American Desert" will present broad fields of golden grain. The high anticipations of the most sanguine may not be

fully realized, but the derogatory reports of disappointed fortune-seekers will ere long be disproved by a multitude of facts.

Of the cereals, wheat, oats, and barley grow readily in this soil, and produce abundant crops when properly irrigated and cultivated.

Wheat grows well throughout the length of the Territory, from its northern to its southern limits. In the section under consideration spring wheat is chiefly sown, though on Clear Creek and on the Platte, in the vicinity of Denver, some winter varieties have been tried with success. The reason why more winter wheat is not sown is not because of any failure to yield good crops, but because of the difficulty of preparing the ground in the fall, when it is so dry and hard that it cannot be plowed.

The usual time of sowing spring wheat is during the months of March and April, and sometimes the farmers succeed in getting it in as early as February. Harvest begins in the southern limits of this section, along the Platte, in the latter part of July, closing in the northern portion, on the Cache à Poudre, about the middle of August.

The yield per acre has in some instances reached fifty bushels, very often from thirty-five to forty bushels. Mr. W. R. Thomas,* associate editor of the Rocky Mountain News, who made, during the harvest of 1868, an extended examination of the crops in most of the valleys of Eastern Colorado, estimates the average yield of wheat at twenty-eight bushels per acre. Well-attested cases are known where from sixty-five to seventy-five bushels have been raised on one acre. The estimate is for the actual yield, including all losses, want of care in sowing and harvesting, &c. Where proper care is given to this cereal, and it reaches maturity without injury from the destructive grasshoppers, a yield of thirty-five bushels to the acre may be expected.

From Mr. Thomas's report—which is appended to this article—it appears that the wheat returns from the various valleys of this section, for 1868, foot up two hundred and five thousand bushels (including an estimate for Clear Creek and both sides of the Platte Valley.) At an average of twenty-eight bushels, this shows that about seven thousand three hundred acres were sown in wheat that year. Most if not all of this was grown on the creek bottoms; yet the ridges or uplands, if properly irrigated, would doubtless yield as heavy crops as the bottoms, and it would ripen eight or ten days earlier.

All the varieties which have been tried appear to grow well and bring out fully their several peculiarities, but those chiefly sown are the Chili, Siberian, White Sonora, Blue Stem, Canada Club, and Egyptian or Seven-headed. The White Sonora is most prized, not only on account of its heavy yield, but also because of the beautiful white flour it makes. A new variety, to which, as yet, no name has been given, is now being tested in the vicinity of Denver. If the result equals the present appearance, it will become one of the most popular varieties yet introduced.

The measured bushel of Colorado wheat, if well cleaned, will weigh from sixty-two to sixty-four pounds on an average. In comparing this with the wheat of the States, however, it must be remembered that the grain is perfectly dry, having been raised with scarcely any moisture on the ear from which it is taken—in this respect corresponding with the

* As I shall have occasion to use Mr. Thomas's estimates in regard to the various productions of this section of the Territory, I may say that, from a careful examination of his figures, and of his method of obtaining the data upon which they are founded, as well as from personal inquiries made while passing through the Territory, I am satisfied that he does not exceed the true average, but rather falls below it.

California wheat, requiring to be moistened before grinding. No part of the Union can produce better flour than Colorado, in respect to clear, pearly whiteness, richness in gluten, and ease with which it is converted into bread; and like the flour of the Pacific coast, it will doubtless bear transportation to any part of the world without damage from climate.

Oats are grown with ease and yield abundantly wherever they have been tried in the Territory; in fact, there is no part of the Union where heavier crops of oats can be produced than here. I have ascertained some instances where the amount per acre by actual measurement was from forty-eight to fifty-five bushels, and others are reported as high as one hundred and twenty-five bushels. These were not in little garden patches, which received extra care to report to fairs and societies, but crops taken from extensive farms under ordinary care; in one instance from an aggregate of seven thousand bushels. "Volunteer" crops will come up year after year from the seed scattered during the previous harvest. Mr. Thomas's estimate of thirty-five bushels per acre, and the aggregate of this section for 1868—two hundred and fifty-eight thousand four hundred bushels—shows that something over seven thousand three hundred acres were sown in that cereal.

The soil and climate seem well adapted to the successful growth of barley, which yields a bountiful return for the labor bestowed upon it. Little demand has existed for this grain, however, and not much attention has been given to its cultivation.

In regard to rye my information is deficient, but from what I have ascertained I do not think it yields as good crops as the other cereals named.

That portion of the Territory north of the Platte does not appear to be well adapted to Indian corn, the climate being rather too cold for it. The summer days are warm enough, but the nights are generally cold, and retard its growth. All the corn that I have seen which was raised in this section has been of an inferior quality. It may be that by experimenting with the different varieties, one or more may eventually be found adapted to this climate and soil. The Australian, a white corn, which is said to be the best; the Egyptian, a yellow variety, and the Mexican, mixed. The aggregate return from the valleys heretofore named, for the year 1868, was about thirty-two thousand bushels, averaging, perhaps, twenty bushels to the acre, showing that one thousand six hundred acres were planted. Mr. Thomas gives the average yield per acre over the whole eastern part of the Territory as twenty-five bushels, but the yield in the southern part is much larger than in the northern section.

OTHER PRODUCTIONS.

Irish potatoes seem to be perfectly at home in Colorado, growing readily and abundantly wherever planted, not only in the valleys of the plains, but even far up the narrow defiles of the mountains, ten thousand feet above the level of the sea. Some of the finest patches I saw were along the margin of Clear Creek, between Denver and Golden City, where the stream bursts its way through the lofty *mesas*. In quality they equal the best grown in the States, being large, finely flavored, and mealy. On account of their rapid growth they are sometimes defective in the center. The amount raised in this section last season was probably ninety thousand bushels, and the average yield over one hundred bushels per acre. In one case, in one of the interior mountain valleys, three

thousand two hundred bushels were gathered from eleven acres. In another, on the bottom land of the plains, over seven hundred bushels were taken from one acre. Although I have placed the average at one hundred bushels per acre, yet two hundred bushels may be safely counted upon where the proper care and labor are bestowed upon them.

Turnips, beets, cabbages, tomatoes, peas, beans, onions, &c., are all raised with ease wherever the attempt has been made, some of them occasionally reaching an enormous size; but, on account of the cold nights, which retard growth and delay the maturing season, they come into market later here than in other sections corresponding in latitude.

Wild hops grow in abundance along the creeks, and, when cultivated, thrive in all parts of the Territory.

FRUITS.

So little has been done in the way of raising fruit north of the Platte, that I am almost wholly unadvised on this point. Apple, pear, cherry, and plum trees are being planted out in small quantities, but very few have yet commenced to bear. Some who have attempted it have become discouraged by obstacles they have met with, the grasshoppers in the summer and fall eating off the leaves, and the jack-rabbits gnawing them in the winter. Others, however, are more confident of success, claiming that apples, pears, and cherries can be raised here as well as in the northern States, and I can see no reason why this may not be so. All that is required is proper experimenting with the various varieties to find those best adapted to this climate and soil. The establishment of a good nursery in the vicinity of Denver would not only prove a profitable investment to the proprietor, but would give a great impetus to fruit raising.

Strawberries are being grown successfully around Denver, producing good crops, which are gathered from the 10th to the last of July. There are several native varieties found along the slopes of the mountains, which if cultivated, would probably prove more productive and profitable than any varieties introduced.

The wild raspberries found within the mountain ranges are fine, having an excellent flavor. Two kinds are found here, *Rubus triflorus* and *R. deliciosus*.

The wild plum, *Prunus chicasa*, grows abundantly, the trees often bending under the weight of fruit, which has an excellent taste.

Besides these there are some species of gooseberries and currants, found throughout this section, as the *Ribes lacustre*, *R. aureum*, and *R. floridum*, which, if carefully cultivated, may prove excellent varieties.

There are also two varieties of strawberries common here, one of which, found in the mountains, has a most delicious flavor, surpassing in this respect anything I ever tasted in the States. I would recommend these native varieties to the agriculturists of Colorado as certainly worthy of cultivation, at least until their qualities under culture are thoroughly tested.

STOCK RAISING.

This business, which occupies so important a position among the agriculturists of the plains, requires more than a passing notice. To add any real information to what has already been spread before the public would require a more thorough examination than I have been able to

make, and I will therefore only state the substance of the territorial laws in regard to stock:

SECTION 1. Non-residents may herd stock in this Territory for one year by payment of fifty cents for each animal so herded, in lieu of all other taxes; provided only twenty cents shall be collected on sheep.

SEC. 2. Non-residents desiring to herd cattle or stock in the Territory are required to file with the recorder of the county a certificate of the number and description thereof in the following form:

TERRITORY OF COLORADO,
— County.

The undersigned, owner (or agent of the owner, as the case may be) of the following described animals, proposes to keep and herd the same for grazing purposes, within the county aforesaid, to wit: (describing the number of animals of each kind, respectively, with brands, if any,) from the — day of —, A. D. 18—, until the — day of —, A. D. 18—.

This certificate must be acknowledged before the recorder of the county by the person executing the same.

SEC. 5. The penalty for herding without filing such certificate and payment of required tax is two dollars for each animal except sheep, and one dollar each for sheep.

SEC. 10. Forbids importation of Texas cattle.

The butter made here, where proper care is taken, is of most excellent quality, and on account of the demand for it the price of milch cows is kept up to good figures.

IRRIGATION.

The arable portion of the Territory requires irrigation, as the amount of rain is not sufficient in any portion, except, perhaps, a few of the little mountain valleys, to supply the amount of moisture necessary for the crops; but, happily, while nature withholds her rains from these broad plains, she compensates by furnishing ample means for irrigation. As heretofore stated in my description of this section, not only are the bottoms along the creeks within reach of the waters of these streams, but almost every portion of the ridges and terraces which lie between these valleys, by an extension of the ditches or acequias, can be irrigated. While the ridges near the mountains have a greater altitude above the water of the creek, at the same time the descent of the creek is more rapid. Through the section we have been considering the fall of the creeks varies from fifty feet to the mile down to a few feet as they recede from the mountains, and, as but few of the ridges exceed fifty or sixty feet on their average level, it requires the extension of but a few miles to irrigate any portion. By combining together and cutting a large ditch the farmers are enabled to lessen the expense of irrigation. An association on the Platte, above Denver, have spent \$14,000 in forming a main ditch five and a half miles long, which supplies fourteen farms with water, and may be made to supply other lands along its course. A descent of one-fourth of an inch to the rod carries the water through the ditch with sufficient rapidity to prevent its being absorbed.

It is necessary, as a matter of course, in digging these ditches to carry them to the highest point of the farm, that all portions of it may be supplied. From the main ditch smaller ones can easily be made wherever desired, by means of a plow.

The rights of parties owning lands along streams to water and of

way for ditching is regulated by law, an abstract of which I give from the Revised Statutes, published in 1863:

SECTION 1. Claim owners on the bank, margin, or neighborhood of any stream, are entitled to use the water thereof for the purpose of irrigation to the full extent of their land.

SEC. 2. Those not having sufficient extent of land to obtain the requisite fall, are entitled to the right of way through the tracts which lie between them and the stream at the point necessary to tap it.

SEC. 3. Such right of way extends on to the ditch, dike, or cutting, sufficient for the required purpose.

SEC. 4. When the water in the stream is not sufficient to supply all, the probate judge shall appoint three commissioners to apportion it.

SEC. 5. When the owner of lands through which it is desirable to take a ditch refuses, then the right of way is to be condemned according to the provisions of the chapter concerning corporations—(the usual law in such cases.)

SEC. 7. Requires ditch owners to preserve the banks of their ditches, so as not to flood or injure the property of other persons.

SEC. 10. Requires the owners of ditches crossing highways to make bridges at these points.

FENCING.

With the Colorado farmer, as with all those of the prairie lands of the West, fencing is an important item. The plains being timberless, except the occasional strips of timber along the creeks, the procuring it from the mountains, the nearest point where it is to be found, necessarily makes it expensive. Hence, ingenuity has been taxed to find plans to inclose land with the least expense. The kind generally in use is the post and plank or pole fence. As swine are almost unknown in this part of the Territory, a two or three-board fence is sufficient protection against the stock, which has such ample outside range. I made an effort to find the cost per acre of irrigation and fencing, but found it entirely impossible from the data obtained to make an average with any degree of certainty. I will give but one estimate, made by a gentleman on Clear Creek, in respect to the difference in cost between the board and wire fences. The wire fence, according to this estimate, would cost one dollar and six cents per rod, while the board fence could not be made for less than two dollars per rod. It will require a large accumulation of facts before a reliable average can be made in regard to these two items; and as they have an important bearing upon the agricultural interests of this country, it would be well to obtain these facts as rapidly as possible.

OBSTACLES AND DRAWBACKS.

Notwithstanding Colorado has so many advantages in an agricultural point of view, yet the Territory has also its drawbacks. The first of these is the dry weather, which makes irrigation necessary, if this can be considered a drawback, which is somewhat doubtful; for although it involves considerable expense, yet, when for a series of years balanced against the loss in non-irrigating sections by drought, the difference would not be as great as at first supposed.

The second drawback is the expense of fencing; but this is not peculiar to Colorado, being common to all prairie countries; and, as no attempt is made here to raise swine, small farmers often combine and inclose two, three, or four farms in one fence, thus materially lessening the cost.

A third and serious drawback arises from the depredations of the grasshoppers, the great enemy of the farmer west of the Missouri River. I had felt some doubts in regard to the reports concerning the cosmopolite character, and the depredations of the *Caloptenum spretum*, (the "hateful grasshopper of Colorado,") but a visit to the plains and mountains of the West has dispelled these doubts. Having for several years past carefully studied the habits of the grasshoppers of the State of Illinois, I entertained a hope that some remedy might be found to mitigate the evil. Although I have not entirely abandoned all hope of ultimate relief, yet I must confess that for certain districts I can at present conceive of no remedy.

On the 17th of June of the present year I met with them at St. Joseph, Missouri, where they literally darkened the lower parts of the walls of the hotel at which I stopped. They were at this time in their complete state, and had been for nearly two weeks previous. At Omaha the next day I saw none. At Cheyenne City, Wyoming Territory, from June 20th to the 29th, although I made careful search on the plains, I saw but one or two in the perfect state, but myriads of young larvæ. At Big Thompson Creek, Colorado, the perfect insects were abundant, while at Cache-a-la-Poudre, twenty miles above, very few could be found. Around Denver, July 7 to 15, a few in the perfect state were found, most of which seemed to have but very recently entered it; the larvæ and pupæ were abundant. Proceeding into the mountains directly west from Denver, toward Middle Park, I saw myriads along the narrow mountain valleys and cañons, often making the air look as though it were filled with snow-flakes. I traced them in this perfect state up the mountain heights to the perennial snows; even on top of those cold, glittering masses I caught perfect insects. And here, too, the bears were seen feeding on this ubiquitous pest. Even along the bare crests of the highest peaks of Snowy Range I found both the perfect insect and the pupæ as active as in the valley beneath. This convinced me that but little hope could be entertained of freezing them out by fall plowing, even were this entirely practicable here. And again, in the uncultivated valleys and slopes of the mountains, year by year, myriads are produced, which, when they reach their perfect state, are borne by the wind around or over the ranges to the plains. They do their flying when the wind is blowing; rising up in the air they turn their heads against it, and are thus borne backwards in the direction it is blowing. How far a large number can or do move during the perfect state, I am unable to say, but am strongly of the opinion that any one brood moves but a few miles; perhaps under some circumstances and in some localities, as on the plains, it may reach from thirty to fifty miles. Hence their progress eastward must be by successive waves.

They often sweep almost clean the crops which are green when they appear in such vast numbers. In this section of Colorado their time of greatest abundance and destructiveness is the last of August and September. Hence, farmers who are acquainted with their movements strive to have their crops gathered, if possible, before that time. But some seasons these vandals make their irruptions from their mountain fastnesses earlier in the season; then woe to the luckless farmer whose pride is his broad acres of waving oats. They revel in these when sufficiently abundant; but not being over nice in regard to diet, when the richer repast fails they enter with avidity upon the destruction of whatever comes in their way—vegetables, trees, weeds, even eating into the bulb of the onion. Tomato plants are said to escape their ravages; but whether this is true or not I am unable to say.

The planting of trees on and around farms, the increase of agricultural

population, and a more general cultivation of the soil, will doubtless have a tendency to increase the amount of rain, and also to disturb their egg deposits, and thus decrease their numbers. The introduction of swine and fowl in considerable numbers would also assist in their destruction, and by this means those points more distant from the mountains will eventually be freed from their depredations. Fortunately they do not appear in such immense numbers every year; in two out of every three seasons comparatively little damage is done.

The Colorado potato bug, (*Doryphora decemlineata*,) another insect enemy of this country, has already been noticed in the agricultural reports.

Before closing, I will add the answers to some inquiries I made, which were handed in by Mr. A. H. Miles, of Vineland Farm, near Denver:

1. "I commenced farming in Colorado in the spring of 1860, and sowed the first wheat sown in this section, (one hundred pounds,) from which I harvested four thousand six hundred pounds. I have continued to sow the same ground in wheat every year since, gathering an average crop of forty bushels per acre. I have known as much as seventy-five bushels of wheat per acre raised in this part of the Territory. I have had forty-five pounds of good flour made from one bushel of Colorado wheat."

2. "Oats yield a fair crop, reaching seventy-five bushels per acre; but I have known black oats to reach one hundred and twenty-five bushels to the acre."

3. "In 1868 I planted forty acres of Egyptian and Australian corn, and in September I called in five farmers, who measured off an acre, and cut it and put it in stook. Taking an average stook, they husked it and found the weight of the ears to be one hundred and fifty-four pounds; there were one hundred and fifty stooks on the acre."

4. "Fruit trees have not proved successful with me. The Lawton blackberry has not done well, but is improving. The Red Antwerp raspberry fruits finely, but not as well as our native berry taken from the mountains. The gooseberry grows and produces finely, being wholly free from mildew. Grapes, as yet, have not been fairly tried. Strawberries are a complete success, the scarlet proving the best variety for table use; the Wilson's Albany the heaviest yielder. The native varieties, taken from the mountains and planted in the valleys, do not appear to succeed as fruit-bearers."

REMARKS BY MR. MILES.

"Alkali in our ground keeps drawing up from the subsoil, and will doubtless prevent our surface soil from deteriorating for a long time.

"Siberian spring wheat weighs sixty-two pounds to the measured bushel, and turns out flour equal to any of the winter varieties.

"Black oats weigh thirty-eight pounds, and English barley oats forty-five pounds, to the bushel.

"The corn measured was the Australian white variety, which stools like wheat. I have taken fifteen large ears from one hill of this variety.

"Mr. Perrin tried the mountain strawberry three years, failing in the end."

NOTE.—1. I have used the word "plains" in the western sense, meaning all that portion of the country east of the mountains, embracing valleys, terraces, and prairies.

2. At the Territorial fair of 1867 Mr. J. W. Wier, of Platte Valley,

Arapahoe County, showed a yield of sixty-eight bushels of wheat to the acre without irrigation. Messrs. Younker, Crawford, and McClellan, of Frazer Ranch, forty-one and a half bushels, irrigated but once. Messrs. Laughlin and Wilson, one hundred and thirty bushels of corn per acre. A. F. Middaugh, five hundred bushels of potatoes per acre.

CYRUS THOMAS,

of U. S. Geological Survey of Colorado and New Mexico.

Hon. H. CAPRON, *Commissioner of Agriculture.*

AGRICULTURAL STATISTICS OF COLORADO.

The following agricultural statistics of Colorado, for the year 1868, were prepared by W. R. Thomas, associate editor of the Rocky Mountain News:

The agricultural statistics which have been collected divide themselves into two classes: first, the number of acres cultivated in certain valleys, with an estimate regarding the crop in those valleys; and second, the actual crop of other valleys, as gathered from reliable sources.

Number of acres cultivated.

Valleys.	Wheat.	Corn.	Oats, barley, &c.	Potatoes, &c.
Platte, above Denver.....	1,242	395	800	542
Bear Creek.....	605	40	421	158
Cherry Creek.....	108	78	256	363
Fontaine qui Bouille.....	1,735	3,105	1,381	94
Huerfano.....	1,160	2,950	232	546
St. Charles.....	485	742	135	87
Arkansas.....	2,075	3,524	484	176
Totals.....	7,410	10,834	3,709	1,966

NOTES.—1. Two or three small valleys are included in the Arkansas. 2. Rye and buckwheat are included in "oats, barley, &c."

Taking the following averages—for wheat, twenty-eight bushels per acre; for corn, twenty-five bushels per acre; for oats and barley, thirty-five bushels per acre; and for potatoes and miscellaneous vegetables, one hundred bushels per acre—and the estimated crop of these valleys would be as follows:

	Bushels.
Wheat.....	207,480
Corn.....	270,850
Oats, barley, &c.....	129,815
Potatoes, &c.....	196,600

The remaining valleys were visited after the crop was threshed, and the number of bushels raised were collected as far as possible:

Bushels of grain.

Valleys.	Wheat.	Corn.	Oats, barley, &c.	Potatoes, &c.
Platte, below Denver.....	17,564	3,013	33,024	6,875
Cache à Poudre.....	5,258	2,125	25,000	5,217
Big Thompson.....	8,206	3,297	27,441	32,375
St. Vrain.....	21,673	2,075	31,023	2,800
Left Hand.....	10,350	875	13,707	2,580
Boulders.....	46,530	-----	42,001	-----
Las Animas.....	19,542	21,385	6,058	-----
Totals.....	129,123	32,770	178,254	49,847

NOTES.—1. The figures on corn and potatoes are far below the real facts. 2. Coal Creek is included in Boulder, and several small valleys in the Las Animas. 3. The corn and potato crop was not collected in the Boulder Valley.

Recapitulation.

	Wheat.	Corn.	Oats, barley, &c.	Potatoes, &c.
Bushels estimated from the number of acres.....	207, 480	270, 850	129, 815	196, 600
Bushels collected after the threshing season.....	129, 123	32, 770	178, 254	49, 847
Totals.....	336, 603	303, 620	308, 069	246, 447

These figures, as now given, comprise the mining and agricultural statistics which have appeared in the series of editorial letters referred to. The public must not think that they represent the whole agricultural product of the Territory. Several valleys have not been visited, among which are Clear Creek, Bijou, Kiowa, Running, Plum, and Monument Creeks, the Upper Arkansas Valley, the different valleys lying between the St. Charles and the Las Animas, including the Greenhorn, Upper Huerfano, Apishapa, and Las Cucharas, and the country beyond the Sangre de Christo range in the San Luis Valley. The crops in these various sections have been large, especially in small grains; and had it been possible to collect the figures concerning them, there is no doubt that those now given would have been increased at least one-half.

VALUE OF THE CROP REPORTED.—The value of the crop for the sections given above at government prices would be as follows:

Products.	Number of bushels.	Price per bushel.	Value.
Wheat	336, 603	\$1 80	\$605, 885 40
Corn	303, 620	1 10	333, 982 00
Oats and barley.....	308, 069	1 20	369, 682 80
Potatoes, &c.....	246, 447	75	184, 835 25
Grand total.....			1, 494, 385 45

AN ESTIMATE ONLY.—We conclude this summary by submitting an *estimate* of the agricultural products of the whole Territory in 1868, which we consider nearly correct. We arrive at the result by increasing the figures on wheat, corn, oats, barley, &c., one-half, and by doubling the potatoes and miscellaneous crop. The table will stand thus:

Products.	Bushels.	Value.
Wheat	504, 904	\$1, 008, 667 20
Corn	455, 430	500, 973 00
Oats, barley, &c.....	462, 103	554, 529 60
Potatoes and miscellaneous	492, 894	369, 670 50
Hay and dairy products		250, 000 00
Total		2, 683, 840 30

STOCK RAISING IN MISSISSIPPI.

Marion County, Miss.—The southern counties of our State are particularly adapted by nature to the raising of large herds of cattle and sheep. With a soil totally unfit for the production of the cereals, save where some water course has deposited the rich loam washed from upland counties, it produces grass, and formerly reed and cane, in abundance. The ruinous practice of burning off the woods in early spring has destroyed nearly all the reed and cane, but I have little doubt that it would spring up again if some stringent local law could be passed to prevent the woods from being burned at all. The district known as the "piney woods" was formed by nature for the rearing of flocks and herds. Little or no winter feeding is required to keep cattle in good condition through the whole year, and sheep are never taken up except

at shearing time. Most of the farmers have come to the conclusion, especially in this (Marion) county, that raising stock is the most profitable business that can be followed here. There is one thing that grows to perfection in these pine barrens. Incredible quantities of the sweet potato can be grown, and there is no more nourishing food for stock. It is true they are very liable to rot, but it is generally in the spring after the young grass begins to shoot up.

A small statement will show how profitable sheep may be made with a very little care and expense. Five hundred head of sheep may be bought for \$750, and placed in a good range in the piney woods, several miles from any thickly settled locality, away from the vicinity of dogs, &c. The returns for the first year will be as follows:

2,000 pounds of wool, at twenty-five cents per pound.....	\$500
375 head of sheep increase, at \$1.....	375
Total	<u>875</u>

Expenses.

Hire of hand to look after sheep, at \$10 per month.....	\$120
Hire of hand to shear sheep.....	25
Total	<u>145</u>

Leaving \$730 clear profit the first year. This may, perhaps, appear a large estimate, but I know of a good many who are, in a small way, realizing a larger per cent. profit on sheep, and give them no care at all. A little attention will prevent them from straying off. Sheep running loose in the woods in this section are subject to no epidemics, and if not troubled by dogs will nearly double every year.

Some of the citizens of our county have been thinking the matter over and have concluded to buy up a large number of sheep and try the experiment of raising them on an extensive scale. Our native sheep, however, though very hardy, are small and poor in quality of wool. We have thought that if we could import some other varieties of sheep from older States and cross them with our native breed, with the view of combining the various good qualities of length and fineness of wool, size, and mutton qualities, with the hardiness and vigor of our home stock, the profits of the business might be largely increased. There is no better situation than this location for making money by raising stock. The pastures are all public lands, and will, in all probability, not be entered for years to come. How the finer grades of sheep will flourish here remains to be seen, but I have no doubt that, by repeated crossings, a breed combining all the good qualities consistent with vigor and hardiness might be easily obtained.

FRUITS ON THE EASTERN SHORE OF LAKE MICHIGAN.

Jacob Ganzhorn, corresponding secretary of the Western Michigan Lake Shore Horticultural Association, reports the following statistics of the fruit crop of last year in the vicinity of Spring Lake:

717 bushels apples, at \$1 50.....	\$1,075 50
55 bushels pears, at \$8.....	440 00
10,323 bushels peaches, at \$3 25.....	33,550 00

23 bushels English cherries, at \$5.....	\$115 00
15 bushels plums, at \$5.....	75 00
11½ bushels quinces, at \$5.....	57 50
5,815 pounds grapes, at 15c.....	872 25
182 bushels currants, at \$2 56.....	465 92
26 bushels gooseberries, at \$3 20.....	83 20
16½ bushels raspberries, at \$8.....	129 00
48½ bushels strawberries, at \$4 80.....	231 60
4 bushels blackberries, at \$4 80.....	19 20
5 bushels crab apples, at \$4.....	20 00
	37,134 17

The extent of fruit culture on the east shore of Lake Michigan has not been fully ascertained. Some idea can be formed from the following figures. In an address delivered before the Western Michigan Lake Shore Horticultural Association, October 1, 1867, by Henry S. Clubb, it was stated that in the vicinity of Spring Lake the

Total number of fruit farms was.....	48
Total number of vineyards.....	33
Total number of acres purchased for fruit.....	1,564
Total number of acres in grapes.....	71½
Total number of acres in fruit trees.....	486½
Total number of acres in preparation.....	597½
Total number of vines planted out.....	29,907
Total number of raspberry canes planted out.....	12,625
Total number of fruit trees planted out.....	68,144
Total number of peach trees in nursery.....	151,500
Total number of apple trees in nursery.....	200,000
Total number of vines in nursery.....	17,000

Had the fruit farms and vineyards on the other side of the river, adjacent to the city of Grand Haven, been included, it would have increased the figures about one-third. In the two years since these statistics were collected, the number of trees and vines planted has been increased at least one hundred per cent., and the number of new fruit farms and acres of land cleared for fruit purposes has increased in a still greater ratio.

This is but the instance of one neighborhood of the lake shore region, and may be regarded as about one-twelfth of the whole lake shore region.

ABORTION IN COWS.

The second report of the commission appointed by the New York State Agricultural Society for the investigation of abortion in cows, just issued by the society, concludes with the statement of the following affirmative results reached by the commission:

First. That cows which have first calved at under three years of age are more liable to abort during their subsequent pregnancies than those which first calved at three years of age or over, in the proportion of five to three; and that eighty-three per cent. of the cows raised on the farms reporting them do first calve at under three years of age.

Second. That cows subjected to removals at any time are liable to abort, over those raised on the farms, in the proportion of seven to four and one-half, and that sixty-three per cent. are thus removed.

Third. That cows subjected to removals during pregnancy are liable to abort, over those moved while not pregnant, in the proportion of nine to two, and that seventy per cent. of those moved yearly are pregnant, and seventeen per cent. are moved yearly.

Fourth. That arrest of development is the condition immediately preceding the abortion; that an excessive drain upon the secretion of milk, during pregnancy, has a tendency to produce arrest of development in the fœtus from inanition; and that an excess of seventy per cent. of milk is demanded from the cows in this district where abortions prevail.

LIVE STOCK AT CHICAGO.

A statement furnished by George T. Williams, assistant secretary, of the receipts and shipments of live stock at the Union Stock Yards, Chicago, for each month of the second quarter of 1869, presents the following totals :

RECEIPTS.

Source of supply.	Cattle.	Hogs.	Sheep.	Horses.
Illinois Central railroad.....	19, 034	85, 626	27, 356	12
Chicago and Rock Island railroad.....	22, 851	56, 932	7, 740	16
Michigan Central railroad.....	218	861	623	.....
Pittsburg, Fort Wayne and Chicago railroad.....	314	1, 303	364	21
Chicago and Alton railroad.....	20, 117	67, 417	17, 568	514
Chicago, Burlington and Quincy railroad.....	41, 272	134, 940	24, 757	42
Chicago and Northwestern railroad.....	19, 482	55, 176	7, 992	28
Michigan Southern railroad.....	186	2, 414	1, 792	1
Pittsburg, Cincinnati, and St. Louis railroad.....	250	1, 132	808	1
Driven into yards.....	962	43	.....	.....
Total.....	124, 716	405, 844	89, 000	175

SHIPMENTS.

Source of supply.	Cattle.	Hogs.	Sheep.	Horses.
Illinois Central railroad.....	987	.....	.....	16
Chicago and Rock Island railroad.....	1, 947	435	300	30
Michigan Central railroad.....	28, 332	41, 246	17, 403	13
Pittsburg, Fort Wayne, and Chicago railroad.....	46, 508	150, 701	12, 920	32
Pittsburg, Cincinnati, and St. Louis railroad.....	6, 067	715	385	12
Chicago and Alton railroad.....	168	.....	.....	.....
Chicago, Burlington, and Quincy railroad.....	241	.....	100	3
Chicago and Northwestern railroad.....	783	1, 337	961	91
Michigan Southern railroad.....	27, 620	164, 714	7, 991	14
Total.....	112, 653	359, 148	30, 060	211

LAW CONCERNING THE CANADA THISTLE.

The following law, to prevent the introduction and spread of the Canada thistle, is upon the statute-book of Pennsylvania, but its operation is limited to the counties named in the enactment:

SECTION 1. *Be it enacted, &c.,* That every owner, possessor, or occupier of land in the counties of Lancaster, Washington, Fayette, Delaware, and Erie, shall cut or mow all the Canada thistles growing thereon, or in the highways adjoining the same, so often as to prevent their going to seed; and if any owner, possessor, or occupier of land knowingly shall suffer any such thistles to grow thereon, or in any highway adjoining the same, and the seed to ripen, so as to cause or endanger the spreading thereof, he shall forfeit and pay the sum of ten dollars; and any person may enter on the land of another who shall neglect or refuse to cut or mow down such thistles, for the purpose of cutting or mowing the same down, and shall not be liable to be sued in any action of trespass therefor.

SEC. 2. That if any person in said counties shall knowingly vend any grass or other seed in which there is any seed of the Canada thistle, such person shall, for every such offense, be fined the sum of twenty dollars.

SEC. 3. That all fines accruing under the provisions of this act shall be collected before a justice of the peace, in the name of the school directors of the proper district, and be for the benefit of the schools in the district in which the fine is incurred.

SEC. 4. That the provisions of this act shall extend to the county of Washington, not only for the Canada, but for all other species of thistle.

MONROE COUNTY, IOWA.

Our correspondent sends the official State census of the crops of 1863 for this county. Some of the figures are compared with the census of 1860, to show the progress of the county :

	Census 1860.	Census 1869.
Population.....	8,612	11,990
Acres under cultivation.....	51,120	72,976
Wheat, bushels.....	38,538	213,042
Corn, bushels.....	730,856	1,041,961
Oats, bushels.....	29,699	195,518
Rye, bushels.....	4,179	13,169
Buckwheat, bushels.....	8,666	2,382
Potatoes, bushels.....	21,455	31,013
Hay, tons.....	8,625	18,741
Sirup from sorghum, gallons.....	29,832	57,534
Cattle, all ages.....	3,796	14,404
Horses.....	2,283	5,576
Asses and mules.....	96	418
Sheep.....	6,499	29,596
Hogs.....	16,163	23,187

The census for the year 1869 shows the following: Number of rods of hedging planted, 54,092; acres planted for timber, 42; fruit trees in bearing, 20,704; fruit trees not in bearing, 32,439; grapevines in bearing, 10,808; grapevines not in bearing, 14,823; pounds of honey, 19,550; pounds of butter, 234,768; pounds of cheese made, 6,332; pounds of wool shorn in 1868, 82,727; number of dogs, 2,026.

THE TEA PLANT IN MISSISSIPPI.

Wayne County, Miss.—In the spring of 1859 a number of Chinese tea plants were sent to me from the Department of Agriculture. They are now from four to six feet in height, and three to four feet across the heads. The heads, formed by the branches and leaves, are very compact. As an ornament in the flower garden the plant is desirable; its dark, evergreen leaves, when interspersed with its white flowers, present an appearance truly beautiful. It commences to bloom in September; flowers white, with yellowish anthers, resembling the single camellia, and continues to bloom until checked by the severe frosts of December. During the late war, when our luxuries were cut off by the blockade, I made many experiments in drying the leaves of the plant in the shade, in the sun, and by the fire, but failed to secure the delicate taste and fragrance of the imported tea. I drank of the tea made of the leaves in each of these forms, and also of green leaves, and the effect, physically and mentally, was to some extent the same as that caused by the imported article. I am told that successful experiments were made in South Carolina before the war in preparing the leaves as it is done in China, but the expense was found to be too great to make the business profitable. I reside in the long-leaf pine region, sixty miles north of Mobile, Alabama, and my land is, of course, thin and poor.

SALE OF POULTRY IN NEW YORK.

Three hundred and sixty-eight imported fowls were sold in New York, August 18, for a total of \$3,070; averaging \$8 25 each. The highest price paid was for three partridge cochins, \$80. Three houndans brought \$55. Three dark brahmas, \$52. The highest price paid for buff cochins was \$46. Three gray dorkings brought \$38. The lowest price paid was for a pair of white bantams, \$3. A fine pair of Toulouse geese sold for \$26. A fine pair of Embden geese, \$17 50—being less than the amount of freight and duties would have been if imported alone.

With regard to this sale it is remarked that the time of shipment was unfavorable, being at the close of the breeding season. Also, that the fowls, taken as a whole, were inferior stock, and were in poor condition, owing to effects of confinement during the voyage, aggravated by a week's detention at the wharf after landing. A number had died previous to the sale.

GUERNSEY CATTLE.

Answers returned to a series of inquiries relative to this breed of cattle, by breeders of the island of Guernsey, have been collected by Thomas L. Harrison, secretary of the New York society, and the substance officially presented, is as follows:

"The cattle of the islands of Jersey, Alderney, and Guernsey are, it is claimed, not of common origin, and the breeds, though similar, entirely distinct. The Alderney breed, which was smaller than the others, has been to such an extent crossed with the Guerneys that it no longer exists as a distinct breed; and although formerly cattle were occasionally brought to and from the islands of Jersey and Guernsey for breeding purposes, the interchange has, for the past twenty years or thereabouts, been prohibited, the people of each island thinking their cattle better than the others. The Guernseymen assert that their cattle are larger and better feeders, and yield cream and butter of better quality than those of Jersey. The cows are very profitable; the quantity of milk varying from twelve quarts per day (given as an average) for six months after calving to twenty-four quarts, (stated as a maximum yield for that period.) The yield of butter is said to reach in some instances eighteen pounds per week, and four hundred pounds in a year. The cows continue long in profit, and are in their prime from four years of age to eleven. The cattle exported from Guernsey go mostly to England; the numbers sent over in 1866, 1867, and 1868, being as follows:

	1866.	1867.	1868.
Males	6	4	4
Females	356	655	663

"The small number exported in 1866 is accounted for by the prevalence of the rinderpest in England during that year. The prices obtained are, for good cows, about twenty pounds sterling; heifers, sixteen pounds sterling; yearlings, eight pounds sterling.

"As in Jersey, the importation of foreign cattle (except for slaughter) is strictly prohibited, and the government and the agricultural society

of the island each employ an official to prevent infraction or evasion of the law."

The report for 1863 of the Royal Agricultural Society of Guernsey gives some interesting statistics, and some of these are brought down one year later by adding the returns for that year, which will show the following figures:

The total number of horned cattle in the island is 6,787, a prodigious number for its size, which is not much more than twenty square miles, the island being nearly in the shape of a right-angled triangle, with sides of six, six and a half, and nine miles in length. Of the cattle, 3,142 are cows in milk or heifers in calf; of the rest, 1,027 are over and 2,618 under two years old. The number of sheep is under 1,000, but the swinish population is very large, amounting in 1867 to 5,815. The area in cultivation was, in 1867, 3,561 English acres, of which there were in wheat 759 $\frac{3}{4}$; barley, 448 $\frac{3}{4}$; oats, 379 $\frac{1}{2}$; potatoes, 667; parsnips, 930; carrots, 181 $\frac{3}{4}$; beets, 194 $\frac{1}{4}$. The large area given to root crops, 1,306 acres, helps to explain how it is possible to keep so many cattle, although, when we consider that the climate is very mild and peculiarly adapted to grazing, the number is less surprising than it seems at first. It is to be taken into account, however, that the published accounts of Guernsey state that there was a good deal of waste land in the island, notwithstanding its maintaining nearly three hundred and fifty head of horned cattle to the square mile.

The report of the Guernsey Agricultural Society before mentioned contains also its regulations or by-laws, and from it a few items of interest may be taken. The society seems to be a very active and useful one, and numbers three hundred and thirty-three members, paying from five shillings to one pound sterling each. Subscribers of five shillings are members; subscribers of one pound sterling per annum have the right to be present and vote at the meetings of the committee of directors. The society holds three meetings in the year: at Whitsuntide, for the exhibition of all live stock, prizes from five shillings to five pounds sterling; at Michaelmas, for young bulls (first prize ten shillings) and boars, (first prize one pound sterling;) and at Christmas, for fat stock, grain, &c. There is also a show of flowers, fruits, butter, cider, and poultry, held in June; and prizes are offered for farms, in two classes, the small farms of twelve acres and under, and the *large*, of over twelve acres in extent; and also for liquid manure reservoirs, which seem to be held of great importance. The revenue of the society in 1867 was from subscriptions £110; from the estates (legislature) of the island £60; from investments £8 10s. 7d.; and from the shows £37 17s. 9s.; total, £216 8s. 4d.; and it expended in prizes £131 10s. 10d., and upon its library £14 14s. 6d.

Some of the by-laws of the society are worthy of notice. Every member who retires from the society and afterwards desires to rejoin it must pay up his subscription during the intervening period, and one pound sterling as a fee of readmission. It also provided that prize bulls and prize boars must be kept for use in the island for stated periods after winning their prizes, and if kept longer than the time required they receive additional payments. Prize cows and heifers must each produce a calf in the island, and the sows a litter, after the award; and the first-prize cows and heifers receive one pound sterling each in addition upon the birth of each of their next two calves afterwards, if by approved bulls.

The following regulation seems particularly wise in conception, though perhaps difficult to carry out in practice: "If any member, after the

prizes shall have been declared, shall call in question the decision of the judges or managers, he shall be liable to a fine of one pound sterling; and in default of payment he shall be expelled the society."

The scales of points for Guernsey cattle differ somewhat from those used in Jersey. They are as follows:

SCALE OF POINTS FOR GUERNSEY COWS.

	Points.
I. If sired by an approved bull*	2
II. Head small, throat fine, eye lively and large, muzzle small and encircled with white, (or yellow if the beast be black;) horns shiny and slightly curved inward, tipped with black; ears small, and orange-colored inside	7
III. Back straight, and at a right angle with the hind quarters; brisket broad, and in a line with the belly	4
IV. Skin fine and loose, well covered with soft short hair of a good color	2
V. Ribs well rounded; flank light; short space between the ribs and hips; tail fine	3
VI. Fore legs straight and well shaped; hind legs long and well shaped—large down to the knee and hock and fine below; hoofs small; the legs not crossing in walking	2
VII. Udder large, well filled up behind; teats large and well spread; milk-veins large and well defined	4
VIII. Development, (size and growth)	2
IX. General appearance	4
Perfection	30

No prize to be awarded to a cow or heifer having less than twenty-one points.

Two points to be deducted from those stated in the scale, for heifers, on account of their milk-veins not being so well developed; so that a heifer of twenty-eight points shall be considered perfect.

SCALE OF POINTS FOR BULLS.

	Points.
I. If sired by an approved bull	2
II. Head handsome and fine, cheek small, throat fine, muzzle small and encircled with white, nostrils large and open; horns shiny, slightly curved, the points black, not too large at the base; ears small, orange colored inside; eye lively and large	7
III. Neck fine and well set on; brisket broad; carcass round and deep, with ribs well rounded out	3
IV. Back from the shoulders to the tail in a straight line, forming a right angle with the tail; tail fine	3
V. Skin fine and loose, well covered with soft fine hair of an approved color	3
VI. The fore-legs straight, short, handsome, and strong; large down to the knee, and fine below	2
VII. The hind quarters from the hock to the back large and well filled in with flesh, the legs not crossing each other in walking	2
VIII. The development	2
IX. General appearance	4
Perfection	28

No prize shall be awarded to a bull having less than twenty points.

* In the original it is "Race de père approuvé," but it is believed that the meaning is as given above.

CURRENT PRICES OF ENGLISH SHORT-HORNS.

Thornton's "Record of Short-horn Transactions" in England, published in July, 1869, gives details of prices received at the sales of the present season, averages of which, for each herd, are presented as follows:

Mr. Bowly's short-horns, sold April 22, 1869, near Cirencester—

	£	s.	d.
25 cows and heifers, at an average of £93 19s. 1d.....	2,348	17	0
14 bulls and calves, at an average of £35 0s. 6d.....	490	7	0
39 averaged £72 16s. 0d.			
Total.....	2,839	4	0

Three Siddingtons averaged £360 10s.; twenty-one Musicals averaged £55 15s.; ten Violets averaged £37 13s.

Messrs. F. Leney & Sons' short-horn yearlings and calves, sold at Watlingbury, Kent, May 6—

	£	s.	d.
23 heifers, at an average of £70 5s. 2d.....	1,615	19	0
20 bulls, at an average of £56 19s. 3d.....	1,139	5	0
43 averaged £64 1s. 6d.			
Total.....	2,755	4	0

Lord Penrhyn's short-horns, sold at Wicker Park, Bucks, May 7—

	£	s.	d.
34 cows and heifers, at an average of £67 2s. 9d.....	2,552	14	0
18 bulls and calves, at an average of £47 19s. 0d.....	863	2	0
52 averaged £60 10s. 0d.			
Total.....	3,415	16	0

Eight Wild-eyes averaged £90 19s.; and eleven Darlington's averaged £75 10s.

The herd of Mr. Wortley, of Ridlington, Uppingham, Rutland, sold May 13—

	£	s.	d.
48 cows and heifers, at an average of £32 7s. 1d.....	1,552	19	0
14 bulls and calves, at an average of £30 12s. 0d.....	428	8	0
62 averaged £31 19s. 1d.			
Total.....	1,981	7	0

The herd of D. Ainslie, esq., Edinburgh, sold May 18—

	£	s.	d.
19 cows and heifers, at an average of £39 1s. 4d.....	742	7	0
8 bulls and calves, at an average of £26 2s. 4d.....	208	19	0
27 averaged £35 4s. 8d.			
Total.....	951	6	0

The herd of Mr. G. W. Roberts, King's Walden, Herts, sold May 25—

	£	s.	d.
35 cows and heifers, at an average of £28 12s. 5d.....	1,001	14	0
2 bulls, at an average of £42 0s. 0d.....	84	0	0
37 averaged £29 6s. 10d.			
Total.....	1,085	14	0

Mr. W. A. Wooler's short-horns sold, June 8, at Sadberge, Darlington—

	£	s.	d.
10 cows and heifers, at an average of £26 17s. 7d.....	268	16	0
4 bulls and calves, at an average of £17 3s. 10d.....	68	15	6
14 averaged £24 2s. 3d.			
Total.....	337	11	6

The herd of Charles Leney, esq., sold at West Peckham, Kent, June 23—

	£	s.	d.
17 cows and heifers, at an average of £42 12s. 4d.....	724	10	0
7 bulls and calves, at an average of £23 17s. 0d.....	166	19	0
24 averaged £37 3s. 0d.			
Total.....	891	9	0

RECAPITULATION.

Mr. Bowley, cows and heifers, averaged \$469 75; bulls and calves, averaged \$175.
 F. Leney & Son, heifers, averaged \$351 25; bulls, averaged \$284 75.
 Lord Penrhyn, cows and heifers, averaged \$335 50; bulls and calves, averaged \$239 75.
 Mr. Wortley, cows and heifers, averaged \$161 75; bulls and calves, averaged \$153.
 D. Ainsle, cows and heifers, averaged \$195 25; bulls and calves, averaged \$130 50.
 G. W. Roberts, cows and heifers, averaged \$143; bulls and calves, averaged \$210.
 W. A. Wooler, cows and heifers, averaged \$134 25; bulls and calves, averaged \$85 75.
 Charles Leney, cows and heifers, averaged \$213; bulls and calves, averaged \$119 25.

The stock of the late Thomas Crisp was sold at Butley, Suffolk, in July. The short-horns were in low condition, the effect of last year's drought on the root and hay crop, which this year's grass had failed to remove. The average price, therefore, was not a high one. Sales were as follows :

	£.	s.
65 Cows and heifers, at an average of £19 13s. 8d.....	1,279	8
26 Bulls and calves, at an average of £15 14s. 6d.....	408	19
91 Averaged £18 11s.....	1,688	7

At a sale of pigs at the same time, the large breed went off slowly, the best sows commanding fifteen and a half, eleven and a half, and ten and a half guineas. The highest prices for the middle breed were twelve and a half and ten guineas. There was some competition for the small breed whites. A two-year-old sow and nine pigs brought twenty-six guineas, although the pigs were not of much promise. Lady Suffolk was sold for twenty guineas. Prices for other lots ranged from ten to four guineas. The black pigs, descended from the somewhat noted Black Diamond, commanded good prices; the highest-priced sow, with pigs, being twenty-three guineas. One sow and six pigs were sold at thirty guineas. A boar brought thirty-five guineas. Other prices ranged from sixteen to five guineas, one small pig of considerable promise selling for twenty-seven guineas.

Mr. Charles Howard's Oxfordshire Downs, fifty-two shearling rams and one old sheep, sold at Biddenham, Bedford, for £710 6s. 6d., being an average of £13 8s.

ITEMS FROM VARIOUS SOURCES.

In McHenry County, Illinois, there are eleven cheese factories, which use the milk of about 3,400 cows, and the past season have made about 1,600,000 pounds of cheese. In addition there are a number of private dairies.

Mr. C. Needham, of Tulare, California, raised last year, from seed sent from this Department, fifty-four bushels of white Mediterranean wheat to the acre. This year the yield was not quite so large, yet more was produced to the acre than of any other variety.

An immense crop of grapes is reported in Nevada County, California. On the 1st of August two-thirds of a crop had been taken from the Black Hamburgs, and they still seemed full. The Isabellas were loaded to their utmost capacity.

By the assessor's returns for 1869, in Ohio, it appears that, as com-

pared with the returns for 1863, there has been a decrease of over 20,000 in the number of cattle in the State, 356,000 hogs, and 1,416,000 sheep. There has been a decrease in number of sheep in every county, and of hogs in all but one county. There is an increase of 4,200 horses reported.

At the Northern District Fair, at Marysville, California, recently held, Mr. J. R. Nickerson, of Placer County, exhibited one hundred and fifty varieties of grapes, one hundred and seventy-five varieties of apples, thirty of pears, sixteen of peaches, six of plums, five of quinces, and two of nectarines, besides almonds and pomegranates, with thirteen kinds of wine and two of brandy made on his place. Mr. Nickerson is a pioneer, and has several hundred acres in fruits, vegetables, and grains.

A correspondent, writing from Marion County, Florida, says: "On the 30th of July, planted one hundred and fifty orange trees cut down to within three feet of the root. The period referred to is, strange as it may seem to people north, the time for planting all kinds of trees. Anything will germinate here in the rainy season. It is astonishing how the grass grows. I mow every day, between the showers, a variety of fine grasses to cure for the winter use of my cattle. They mow grass here with a *hoe*. It's a fact. A well-known physician told me the other day that he believed there was not a scythe in the city except mine. Those who don't mow with the hoe do so with the reaping hook. But I see signs of improvement."

METEOROLOGY.

COMPILED IN THE DEPARTMENT OF AGRICULTURE FROM REPORTS MADE BY OBSERVERS FOR THE SMITHSONIAN INSTITUTION.

Table showing the highest and lowest range of the thermometer, (with dates prefixed,) the mean temperature, and amount of rain (in inches and tenths,) for July and August, 1869, at the stations named. Daily observations at 7 a. m., and 2 and 9 p. m.

States and stations.	JULY, 1869.						AUGUST, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
MAINE.												
Houlton	3	92	1, 5	52	69.5	2.30	1	86	31	51	62.2	.....
Steuben	2	80	19	51	61.6	1.40	11	80	28	49	61.7	2.00
Williamsburg	4, 11	83	1	52	66.1	1.48	11	80	31	46	61.8	2.88
West Waterville ..	11	87	1, 5	57	69.6	0.93	10	86	31	53	65.7	2.40
Gardiner	11	86	1, 5, 19	59	67.9	1.51	3, 11	79	31	52	64.4	1.16
Standish	11	88	1	54	70.1	3.54	3, 10	85	31	50	65.5	1.92
Norway	4, 11	88	1	55	68.9	2.10	11	87	7	48	64.5	0.57
Cornish	4	90	1	52	68.5	4.03	11	83	31	47	64.4	2.29
Cornishville	11	88	1, 5	56	71.3	3.27	11	85	7, 31	54	67.4	2.23
Averages					68.2	2.28					64.2	1.93
NEW HAMPSHIRE.												
Stratford	28	86	1	48	66.3	2.36	10	84	31	46	61.0	3.17
Whitefield	2	88	1, 5	49	65.6	0.86	10	81	23	44	61.3	2.90
North Barnstead ..	11, 28	88	1	56	70.6	1.11						.....
Goffstown Center ..	11, 25	88	1	49	68.9	1.60	11, 20	86	6, 7	50	65.8	2.88
Averages					67.9	1.48					62.7	2.98
VERMONT.												
Lunenburg	11	84	1	52	68.2	2.75	25	78	31	48	63.9	2.50
North Craftsbury ..	3	84	1	47	65.0	3.45	24	82	7	44	60.1	4.42
Randolph	11	89	1	48	69.0	2.47	10	86	8	46	66.7	1.87
Woodstock	25	83	6	44	65.2	1.76	10, 11	79	7	44	61.6	2.24
Near St. Albans ..	26	84	1, 5	52	67.9	.....	20	84	31	47	64.1	.....
West Charlotte	23	91	1	53	71.8	2.75	10	90	8	52	63.3	4.53
Middlebury	4	82	1	54	67.7	2.56	11, 10, 20, 25, 29 } 75	7, 31	51	64.3	2.85	
Panton	25	85	1	55	69.9	3.61						
Averages					68.1	2.76					64.5	3.13
MASSACHUSETTS.												
Kingston	4	90	2	54	70.2	1.75	11	87	7, 31	52	66.0	1.24
Topsfield	11	89	1	55	69.8	1.31	11	86	31	50	66.3	2.16
Georgetown	27	91	1	54	69.8	1.40	11	91	31	47	66.7	1.95
Milton	16	93	2	56	67.6	2.43	20	90	31	51	68.7	1.95

Table showing the range of the thermometer, &c., for July and August—Continued.

States and stations.	JULY, 1869.						AUGUST, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
Mass.—Continued.		°		°	°	In.		°		°	°	In.
Cambridge.....	4	87	1, 2	58	70.6	.....	20	88	31	54	68.0	.....
North Billerica....	16	90	2	58	71.2	.....	11, 20	88	7, 8	52	65.7	.....
West Newton.....	11, 16, 27	96	6	56	74.9	3.77	20	96	30, 31	50	70.6	1.78
New Bedford.....	16	89	1	57	70.9	1.60	21	81	31	52	65.3	2.70
Worcester.....	16	87	1	53	70.1	1.40	20	85	31	52	67.2	2.21
Mendon.....	11, 16	86	1	50	69.6	2.25	20	84	7	54	66.5	2.20
Lunenburg.....	16	90	1	54	70.2	1.95	20	89	31	50	67.1	3.30
Amherst.....	16	90	1, 2	54	69.1	2.98	20	87	8	49	66.9	1.04
Richmond.....	10	84	2	47	68.3	7.25	.....	.....	.....	.....	.....	.....
Williams College..	25	86	2	54	68.2	5.17	.....	.....	.....	.....	.....	.....
Hinsdale.....	8	82	1	50	66.3	2.60	20	86	31	44	65.3	1.85
Averages.....	.....	.....	.....	.....	69.8	2.76	.....	.....	.....	.....	66.9	2.03
RHODE ISLAND.												
Newport.....	4, 16, 17	81	1	58	69.6	0.76	21	82	6, 7, 31	58	67.4	3.21
CONNECTICUT.												
Columbia.....	16	92	1	56	70.9	.....	.....	.....	.....	.....	.....	.....
Middletown.....	16	93	1, 2	55	70.3	3.02	21	89	1, 7, 8	53	68.4	2.81
Waterbury.....	16	87	2	49	69.1	3.66	.....	.....	.....	.....	.....	.....
Colebrook.....	11, 16	86	1	53	68.3	3.60	20	90	31	47	66.5	1.84
Brookfield.....	9	98	7	54	71.7	4.50	20, 21	86	8	50	68.1	3.30
Averages.....	.....	.....	.....	.....	70.1	3.70	.....	.....	.....	.....	67.7	2.65
NEW YORK.												
Moriches.....	17	92	1, 6	61	74.4	2.99	21	98	7	55	72.8	2.15
South Hartford. {	4, 11, 12, 13, 25	84	1	54	72.5	3.12	.....	.....	.....	.....	.....	.....
Hudson.....	16, 25	90	1, 2	58	71.8	3.67	20	93	8	53	67.9	2.40
Garrison's.....	11, 16	93	5, 6	58	72.4	1.70	20	95	7	52	72.0	1.33
Throg's Neck.....	16	95	1	60	72.6	.....	21	94	31	56	71.0	.....
White Plains.....	16, 17	87	1, 5, 30	60	70.9	.....	.....	.....	.....	.....	.....	.....
Deaf and Dumb Ins.	16	90	1	61	72.3	4.45	20	93	31	58	73.2	1.85
Columbia College.	16	91	14	65	75.0	3.13	21	95	31	56	71.5	1.71
Flatbush.....	16	93	6	57	73.9	2.23	20	92	23	55	71.9	2.11
Glasco.....	16	97	1	54	73.0	1.46	20	100	9	54	72.5	1.54
Newburgh.....	11	94	1	60	73.8	2.60	.....	.....	.....	.....	.....	.....
Minaville.....	16, 25	88	1	52	70.5	5.05	10, 19	96	6	54	69.3	2.15
Gouverneur.....	26	82	1, 5	53	67.1	3.13	20	81	6	46	63.6	1.74
North Hammond..	26	90	{ 1, 5, 6, 11, 12, 22 }	60	70.4	1.54	23	90	31	50	67.7	1.74
Houseville.....	25	85	6	49	67.0	7.96	.....	.....	.....	.....	.....	.....
Leyden.....	25	80	1	48	63.8	6.04	20	81	31	44	60.1	4.84
South Trenton....	25	92	5	50	69.1	10.72	20	88	6, 7, 8, 9	48	64.5	5.22
Cazenovia.....	25	82	1	51	67.0	.....	20	86	31	47	65.4	.....
Oneida.....	25	89	5	52	69.7	12.14	20	90	31	50	68.3	5.95
Depauville.....	26	84	1	52	66.2	3.65	20	83	31	48	64.7	2.75
Oswego.....	10, 25	82	1	51	66.0	6.67	20	82	27, 31	52	68.8	4.20
Palermo.....	25	91	1	40	68.4	4.70	20	93	6, 31	49	65.7	2.60
North Volney.....	25	89	5	53	69.1	.....	20	88	31	52	67.5	.....
Ludlowville.....	15	95	2	53	63.7	.....	20	96	8	51	70.3	.....
Waterburg.....	11, 26	90	5	50	68.5	.....	20	96	7	42	66.1	.....

Table showing the range of the thermometer, &c., for July and August—Continued.

States and stations.	JULY, 1869.						AUGUST, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
NEW YORK—Con.		°		°	°	In.		°		°	°	In.
Nichols.....	15	96	5	49	69.4	.....	20	96	7, 8	48	67.3	.....
Newark Valley.....	16, 25, 26	88	5, 6	50	68.0	4.20	.....	.....	.....	.....	.....	.....
Himrods.....	15	85	5	54	65.7	4.06	20	90	31	49	66.1	3.31
Rochester.....	25	84	1, 21	57	68.9	4.90	20	86	31	52	63.4	4.60
Little Genesee.....	16	85	6	50	67.8	6.13	20	92	8, 31	42	66.2	2.46
Suspension Bridge.....	15	89	1, 12	51	68.9	.....	20	92	7	45	66.2	.....
Buffalo.....	19	87	1, 21	57	70.0	4.57	23	89	5	48	68.7	3.98
Averages.....	.....	.....	.....	.....	69.6	4.61	.....	.....	.....	.....	67.9	2.93
NEW JERSEY.												
Paterson.....	16	95	1	59	73.0	4.95	21	98	6	54	71.8	2.89
Newark.....	16	92	2	57	72.1	3.69	21	91	9	51	70.3	1.56
Trenton.....	16	95	6, 22	62	76.4	3.04	21	96	6	56	75.7	0.92
Rio Grande.....	15, 16	100	1, 5	59	77.0	1.63	21	102	6	50	73.9	0.38
Moorestown.....	16	94	6	60	73.3	1.98	21	98	31	54	72.2	1.26
Newton.....	5, 6	92	31	57	70.3	1.92	.....	.....	.....	.....	.....	.....
New Germantown.....	16	93	2, 6	59	71.7	3.02	21	96	31	54	71.2	1.57
Haddonfield.....	16	94	6	62	73.6	1.77	20	95	6	56	72.8	0.85
Newfield.....	16	99	1, 6	61	75.4	.....	21	101	8	55	74.4	.....
Greenwich.....	16	93	1, 6, 31	63	75.1	2.82	21	93	6	55	72.9	1.56
Vineland.....	16	102	6	58	78.3	2.81	21	102	7	54	75.9	1.28
Averages.....	.....	.....	.....	.....	74.2	2.76	.....	.....	.....	.....	73.1	1.26
PENNSYLVANIA.												
Nyces.....	11	92	5, 23	49	67.7	5.20	21	90	7	38	65.6	1.20
Hamlington.....	25	88	31	53	67.5	3.25	20, 21	88	31	47	64.7	1.92
Fallington.....	16	92	6	62	73.0	2.50	21	95	31	56	74.0	1.00
Philadelphia.....	16	96	1	64	76.3	2.78	21	97	6	58	75.3	1.11
Germantown.....	16	96	4, 5, 8, 22	62	82.9	.....	21	97	7	55	73.7	.....
Horsham.....	16	92	6	60	72.0	2.42	20, 21	94	6	55	71.9	1.30
Plymouth Meeting.....	16	92	2	59	73.1	2.33	20	95	6, 7	55	72.2	1.33
Dyberry.....	11	89	1	50	66.7	2.71	20	90	8	40	63.7	2.26
Whitehall.....	16	90	7	54	72.7	.....	21	94	8	45	71.0	.....
Factoryville.....	11	90	2	50	68.6	2.46	20	93	8	44	66.3	2.10
Reading.....	16	94	2	57	73.0	2.20	21	96	7, 9	55	73.5	1.02
Parkerville.....	16	93	24	61	74.9	1.51	21	99	8, 9	55	74.7	0.82
West Chester.....	16	93	1, 6	60	73.5	1.49	21	94	6	54	72.0	0.77
Ephrata.....	11, 16	96	1	63	78.4	2.29	20, 21	98	8, 31	60	76.8	1.44
Mount Joy.....	17	95	1	60	73.9	.....	21	105	27	53	74.3	.....
Harrisburg.....	16	94	6	64	76.0	3.77	.....	.....	.....	.....	.....	.....
Carlisle.....	16	94	2, 6, 23, 24	60	70.2	3.40	20	95	8	52	73.6	1.10
Fountain Dale.....	16	93	6, 21	60	73.8	3.76	21	94	7	53	71.7	1.89
Tioga.....	16	85	30, 31	46	67.3	4.55	19, 20	86	6, 8	38	64.3	3.35
Lewisburg.....	16	92	2, 21	56	70.5	4.11	20	94	7	50	70.2	2.19
Grampian Hills.....	15	89	6, 21	50	66.8	5.63	20, 25, 28	90	6, 7	46	67.3	2.22
Johnstown.....	16	90	6	50	69.5	5.59	21	89	7	47	69.4	1.66
Franklin.....	3, 14, 15	89	4, 5	55	.....	.....	24, 25	92	31	46	69.6	2.88
Connellsville.....	14, 15, 16	90	30	54	72.3	.....	20, 21, 22	91	31	48	71.6	.....

Table showing the range of the thermometer, &c., for July and August—Continued.

States and stations.	JULY, 1869.						AUGUST, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
PENN'A—Con'd.		°		°	°	In.		°		°	°	In.
New Castle.....	16	89	6	49	72.2	.....	20, 21	89	7, 8	45	72.2	.....
Beaver.....	15	88	23	57	71.5	.....	20, 25	88	7, 9	53	70.4	.....
Canonsburg.....	15	90	22, 30, 31	55	71.5	4.21	21, 24	93	8	47	71.2	1.43
Averages.....					72.1	3.31					70.8	1.65
DELAWARE.												
Milford.....	15	100	22	62	78.4	1.65	21	103	6, 7, 8, 31	58	70.9	0.30
MARYLAND.												
Woodlawn.....	16	94	6	53	74.5	5.70	20	94	31	57	72.9	1.13
Annapolis.....	16	97	23	63	78.4	5.60	21	95	7, 8, 9	59	77.0	1.60
St. Ingoes.....	16	96	22	66	78.2	2.55						
Mt. St. Mary's....	16	92	21	58	72.0	2.22	20, 21	94	7	53	72.4	1.22
Averages.....					75.8	4.02					74.1	1.32
DIST. COLUMBIA.												
Washington.....	16	94	23	63	76.8	2.65	22	98	7, 8, 9	59	76.0	0.70
VIRGINIA.												
Johnsontown.....	11, 16	94	2, 31	64	76.9	3.85	21	95	7	59	75.2	0.20
Hampton.....	16	99	6	65	80.0	6.30	21, 29	98	6, 9	62	77.5	3.50
Zuni Station.....	11, 14, 15 17, 18	98	7	60	80.8	2.37	29	98	7, 9	56	78.7	0.40
Bacon's Castle....	11	104	1, 2	66	82.9	.....	15, 16, 21	100	31	64	81.0	.....
Comorn.....	11	94	6, 23	63	77.8	2.44	21	95	7, 9	60	77.9	0.61
Vienna.....							21	96	5, 7, 8	60	76.7	1.40
Staunton.....	11, 17	93	31	60	75.8	1.70	20	92	8, 9	58	75.0	0.65
Lexington.....	16	101	31	62	79.0	1.02	20	104	7	56	78.4	1.53
Lynchburg.....	15, 16, 17	92	6, 7, 31	63	77.6	.....	22	95	8	56	77.5	.....
Snowville.....	14, 15	93	23	50	71.9	4.60	21	98	10	46	71.4	0.70
Wytheville.....	14	92	21, 23	54	72.5	1.38	23	95	9	49	73.1	1.94
Near Wytheville..	14, 15	88	23	52	72.0	2.80	21	92	9	47	71.7	2.55
Averages.....					77.0	2.94					76.2	1.35
WEST VIRGINIA.												
Romney.....	15, 16	102	31	60	73.9	.....	21	102	7, 31	56	78.9	.....
Weston.....	17	94	23	52	76.6	.....	22, 25	91	7	49	71.8	.....
Cabell C. H.....	11	96	28	40	70.8	3.40	21	96	31	46	77.2	1.30
Averages.....					73.8	3.40					76.0	1.30
NORTH CAROLINA.												
Goldsboro'.....	17	107	22, 23	69	84.4	4.42	22	104	8, 9	64	82.2	3.75
Mt. Olive.....	14, 17, 18	98	24	63	81.8	10.45	22	98	9	62	80.5	7.25
Oxford.....	15	102	6	66	83.0	0.75	22	96	8, 9	56	78.5	2.45
Albemarle.....	11, 14, 15	104	23	59	79.1	0.68	21	99	8, 10	50	77.8	5.95
Statesville.....	15	100	23, 24	60	77.1	1.06	17	98	9, 10	48	76.7	2.56
Asheville.....	14	84	23	60	71.7	1.50	22	86	9	51	72.0	0.22
Do.....	15	84	23	54	70.8	.....	22	86	9	46	71.4	.....
Chapel Hill.....	15	103	23	68	82.5	.....	21	103	31	69	80.4	.....
Averages.....					78.8	3.14					77.4	3.70

Table showing the range of the thermometer, &c., for July and August—Continued.

States and stations.	JULY, 1869.						AUGUST, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
SOUTH CAROLINA.												
Aiken	14	101	7	68	81.4	5.56	15	96	9	61	79.0	5.11
Do							18	96	8, 9	62	79.8	6.00
Gowdysville	11, 13, 15	99	23	69	82.7	2.05	21, 22	99	1, 11	66	83.4	2.40
Averages					82.1	3.81					80.7	4.50
GEORGIA.												
Atlanta							22	98	9	50	75.7	2.12
Macon	11	103	25	70	78.1	3.34	21	103	8	64	80.8	2.85
Berne	10, 13	93	7	70	79.5	9.17	22	92	8	64	77.5	3.90
Penfield	14	99	23	68	81.0	2.17	22	99	8, 9	62	79.7	1.40
Averages					79.5	4.89					78.4	2.57
ALABAMA.												
Opelika	14	102	21, 25	71	82.8	5.13	22	105	7	65	83.0	2.68
Carlowville	11	98	{ 7, 19, 20 22, 25 }	74	80.2	5.67	14, 15, 16	98	9	68	82.6	6.63
Moulton	15	90	23	61	76.1	3.76	16	91	9	59	78.9	0.46
Greene Springs	12	97	23	66	81.2	1.38	16, 22	98	10	59	74.1	2.32
Havana	11, 14	94	24	60	79.8	1.60	16	98	10	62	80.3	3.20
Fish River	10, 12, 13	89	8	74		6.15						
Mobile							23	95	10	74	83.0	
Averages					80.0	3.95					80.3	3.10
FLORIDA.												
Port Orange	13	92	25	71	81.0		30	92	8	74	82.6	
Jacksonville	{ 16, 17, 18, 19, 21 }	95	25	72	83.3	5.46	22	100	8	73	84.5	5.50
Pilatka	4, 13	102	{ 4, 5, 8, 22, 23, 24, 31 }	72	82.5	8.23	19	101	{ 7, 8, 9, 26, 27, 30, 31 }	72	82.2	3.60
Ocala	{ 1, 14, 15, 16 }	98	26, 27, 31	70	88.8		{ 18, 22, 23, 24, 30 }	98	4, 5, 10	72	83.3	
Manatie	2	94	25, 31	76	84.0	7.80						
Chattahoochie	5	99	25	68		8.80	22	99	10	68		
Averages					83.9	7.57					83.2	4.55
TEXAS.												
Gilmer	{ 15, 16, 17, 18 }	95	20	71	82.3	4.32						
Blue Branch	30	93	24	71	80.0	8.80	8	96	19, 28, 30	75	82.8	1.80
Lavacca	20	95	4	74	82.9	11.30	7	96	3, 4	76	82.0	5.10
Austin	30	93	5, 6	71	80.5	9.20	8	97	{ 12, 17, 24, 31 }	75	83.2	1.14
Clinton	{ 21, 28, 29, 30 }	94	5	74	82.4	9.35	9, 10, 26	94	17	74	84.1	4.90
Lockhart	1	94	25	71	81.5	12.00						
Averages					81.6	9.16					83.0	3.24
MISSISSIPPI.												
Grenada							23	100	9, 10	64	82.0	3.30
Paulding												
Brookhaven							16	95	8, 10	70	81.3	10.61
Near Brookhaven	3	94	23	70	82.0	4.90	6, 14	96	9	70	82.0	7.70
Natchez	{ 11, 12, 14, 15 }	89	23, 25	70	82.8	2.38	23	90	10	71	78.1	4.78

Table showing the range of the thermometer, &c., for July and August—Continued.

States and stations.	JULY, 1869.						AUGUST, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
MISSISSIPPI—Con'd		°		°	°	In.		°		°	°	In.
Marion C. H.	13	102	24, 25	66	80.5	1.30	22, 23	102	1	68	82.7	5.90
Averages					81.8	2.86					81.2	6.46
ARKANSAS.												
Helena							22, 23, 24	97	9	70	83.5	
TENNESSEE.												
Elizabethron	14, 15, 16	97	23	53	74.9	3.80	23	100	9	52	76.8	3.89
Tusculum College ..	15	94	23	62	77.9	1.00	23	95	10	60	79.4	1.00
Lookout Mountain.	14, 15	93	23	64	79.0		23	97	7	65	82.5	
Austin	12, 13	94	22	56	78.3	1.95	23	102	9	56	81.1	3.47
Clarks ville	15	91	22, 23	60	75.2	2.13	23	97	8	60	77.7	1.00
Trenton	5	95	23	59	78.5	7.00	23	101	10	60	81.3	5.70
Memphis	12, 14, 16	98	31	64	80.2	2.36	16, 23	98	8	65	81.8	3.26
Averages					77.7	3.04					80.1	3.05
KENTUCKY.												
Pine Grove	16	92	6, 31	60	75.4	5.63	22, 24, 27	96	7, 8	56	76.5	4.29
Lexington	{ 13, 14, 15, 16 }	90	21, 22	60	75.8	4.55						
Louisville	15	96	22	53	76.6	3.39	24	99	9	53	78.3	2.73
Averages					75.9	4.52					77.4	3.51
OHIO.												
Steubenville	15, 16	91	6, 30, 31	59	75.4	5.78	21	93	7	52	76.0	1.45
Painesville	3, 10, 15	84	21, 30	55	68.5	6.49	20	87	6, 7	54	69.0	3.50
Gilmore	16	101	21	58	74.3	7.20	20, 21	98	1, 4	54	73.4	1.60
Milnersville	16	93	31	52	72.2	4.33	20, 23	90	7, 9	52	72.2	0.42
Cleveland	10	88	5, 21, 22	53	69.5	3.82	19	91	7	49	70.1	1.12
Wooster	14, 15	94	{ 1, 23, 30, 31 }	58	74.4	4.60						
Smithville	15	95	29	51	73.0		20	98	31	53	73.9	
Gallipolis	15	94	6, 22	54	72.7	4.94						
Kelley's Island	10	87	21	60	73.4	1.39	19	90	7, 31	57	74.2	1.50
Sandusky	10, 15	88	21	58	71.9	5.52	20, 25	90	8	53	73.3	1.71
North Fairfield	{ 3, 10, 14, 15 }	88	21, 22	56	71.6	4.17	19	88	7	54	72.6	3.50
Carson	14, 15	90	{ 1, 5, 21, 31 }	60	72.7	3.63						
Gambier	15	86	21	59	71.8	9.37						
Westerville	14, 16	91	5	55	71.9	6.18	20, 25	91	31	50	71.9	2.22
North Bass Island.	3	90	5	54	72.6	2.54	19	96	6, 7, 31	57	73.5	1.58
Marion	{ 3, 10, 14, 15 }	89	21	56	70.7	7.53	21	91	18	40	71.8	3.08
Hillsboro	16	88	21, 29	57	74.0	3.34	19	91	7	53	74.1	0.82
Bowling Green	14	96	21	58	74.1	6.41	15, 19	98	6, 7, 31	54	75.5	0.93
Kenton	16	97	23	65	77.7	8.50	25	100	31	60	79.8	1.13
Urbana University.	14	93	30, 31	56	72.8	6.53	25	92	7	55	73.9	1.01
Bethel	16	94	31	56	75.6	1.38	19, 24	95	31	54	79.5	0.50
Edgerton	10	91	21	52	73.5	4.97						
Jacksonburg	15, 16	92	21	56	74.2	2.85	24	96	9	56	77.4	2.52
Mt. Auburn Inst. ...	17	96	5	64	80.0	4.52	26	99	7	59	80.3	1.46
Cincinnati	14, 16	95	22	64	80.9	5.36	21	95	9	63	81.8	1.20

Table showing the range of the thermometer, &c., for July and August—Continued.

States and stations.	JULY, 1869.						AUGUST, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
OHIO—Continued.		°		°	°	<i>In.</i>		°		°	°	<i>In.</i>
College Hill.....	11,12,13 14,15,16	93	5, 30, 31	60	79.3	3.44	{ 20, 21 22, 24 }	96	6, 9, 31	60	78.3	4.06
Averages					73.8	4.99					71.5	1.68
MICHIGAN.												
Monroe City	10	90	21	59	73.1	5.30	20	90	30	42	70.1	1.75
Alpena	10	71	1, 14	53	5.84	19, 24	72	5	54	62.6	2.46	
State Ag. College .	10	91	22	54	70.4	5.77	19, 21	92	31	46	70.6	4.85
Litchfield.....	10	88	30	55	69.4	6.26	19	88	31	51	70.1	4.55
Coldwater	14, 25	86	30	50	68.8	3.69	24	90	7	44	69.7	3.75
Old Mission	2	88	11, 20	52	68.4	2.50						
Grand Rapids.....	10	90	20	54	72.1							
Northport	10	83	5	48	65.4	3.13	24	92	6, 7, 31	50	64.8	3.38
Pleasanton.....	2	85	22	50	65.4	4.20	19, 24	90	7	46	64.3	3.55
Muskegon	9	90	22	58	73.4	2.50						
Otsego	10	90	18, 29	54	69.8		10	98	6, 8	54	67.4	
Copper Falls	1	79	4	38	60.6	1.47	19	80	7	37	65.4	1.78
Ontonagon	9, 15	86	10	52	66.6		24	80	31	50	62.6	
Averages					68.6	4.07					66.8	3.26
INDIANA.												
Aurora	{ 13, 14 15, 16 }	98	31	56	76.3	2.42						
Vevay	16	93	30	59	75.8	0.90	23	95	8, 9	57	76.6	2.10
Mount Carmel.....	15	95	21	61	76.7	0.60	13, 23, 25	96	9	60	78.7	2.32
Muncie	15	92	30, 31	57	72.8	11.15	14	98	7	56	75.2	3.20
Spiceland	16	93	21	59	69.0	5.74						
Laconia	15, 16	95	22, 30	62	77.2	2.32	23, 24	99	7	59	75.7	4.23
Columbia City	14	92	22	57	71.7	8.81	19, 24, 25	90	8	56	73.1	2.31
Knightstown	16	92	5	59	73.0	6.99	25	94	7, 8	58	74.5	4.17
Indianapolis	16	91	30	56	73.7	3.44						
Bloomington	15, 16	89	30	60	74.0	5.12	23, 24	90	7	58	75.5	3.05
Near La Porte	3, 14	89	29	58	73.0	12, 10	20, 24, 27	91	7, 31	57	73.6	3.85
Rensselaer	14, 15	90	4, 20	60	73.8	10.60	24	93	31	55	74.6	3.15
Merom	13	94	5	60	75.7	3.20	24	96	7	58	77.2	1.90
Kentland	10	88	5	56	71.1	20.50	23	95	7	52	73.5	4.75
New Harmony.....	16	93	30	63	77.9	2.59	24	95	8	60	80.1	4.67
Harveysburg	15	94	21, 29, 31	60	76.6	4.55	23	96	31	58	77.6	2.70
Averages					74.3	6.32					75.8	3.26
ILLINOIS.												
Chicago	3	90	20, 21	60	73.4	3.26	24	95	8	62	73.1	1.32
Near Chicago	10	92	20, 29	57	72.9		20	96	16	61	74.3	
Evanston	3, 10	87	20	58	70.4	3.15	19	89	5, 6	61	70.7	3.94
Marengo	3	86	21	50	63.4	2.28	24	91	30	51	69.4	4.60
Effingham	12	98	5	62	78.1	4.50	3	98	30, 31	62	80.2	2.75
King's Mills	10	86	4	57	70.6	2.88	24, 27	89	7	51	70.2	3.82
Louisville	16	95	5	60	77.7	6.10	23	109	7, 31	60	77.0	2.70
Golconda	2, 17	98	21	44	77.6	2.00	26	105	1	72	85.9	1.00
Belvidere	10, 24	85	21, 30	56	68.2	5.39	19	92	7	53	69.8	4.96
Sandwich	24	90	4, 20, 30	58	70.6	3.25						

Table showing the range of the thermometer, &c., for July and August—Continued.

States and stations.	JULY, 1869.						AUGUST, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
ILLINOIS—Cont'd.		°		°	°	In.		°		°	°	In.
Ottawa	10	92	29	58	71.8	4.44	24	98	31	54	75.3	4.24
Pana	16	95	5	61	76.5	3.50						
Winnebago	10	87	4, 21	56	67.5	2.91	24	91	7, 30, 31	52	70.5	4.22
Rochelle	10	90	20	58	71.2	.....	27	96	7	50	74.0	.....
Wyanet	3	89	21	53	71.1	6.86	24	93	8	50	72.8	3.37
Tiskilwa	10	92	29	54	71.1	.....	13, 23, 27	94	7	52	75.8	.....
Hennepin	24	88	5, 21	.....	71.0	.....	27	95	31	50	74.0	.....
Elmira	10	90	30	58	71.3	3.73	24	92	7, 31	57	73.5	7.01
Peoria	10	92	21	57	73.4	7.35	24	95	7, 30	61	76.4	3.39
Springfield	15, 16	92	4	56	76.6	.....	25	98	31	61	78.1	.....
Loami	16	92	5	61	75.9	6.50	25	96	7	58	77.8	0.50
Dubois	13	93	21, 29	58	80.8	4.42	22	98	7	62	80.7	3.57
South Pass	1, 16	94	21	62	78.0	.....	18	100	8, 31	62	80.5	.....
Galesburg	10	87	5, 20, 29	60	72.0	9.00	24	95	31	55	70.6	6.85
Manchester	13, 16	96	20	56	75.8	6.99	27	97	7, 8	58	78.7	1.86
Mount Sterling	10, 16	90	21	61	73.4	.....	20	96	8, 31	57	76.8	.....
Andalusia	3	88	5, 21, 22	58	72.1	.....	24	89	7	55	74.0	.....
Angusta	10	87	5, 21	63	74.4	7.77	24	92	31	55	76.3	6.60
Warsaw	10	90	5, 20, 21	62	74.6	8.42	24	95	31	60	77.6	6.71
Averages					69.4	4.99					75.3	3.86
WISCONSIN.												
Manitowoc ..	24	89	11, 21	56	66.9	3.54	19	92	31	50	66.0	4.77
Plymouth	10	88	20	52	69.0	2.30	19, 24	92	6, 31	47	67.0	3.70
Hingham	24	94	12, 20	55	69.7	.....	24	92	7	44	67.3	.....
Milwaukee	24	90	1, 21	51	68.8	2.76	24	93	7	48	67.0	3.70
Geneva	10	89	5, 12, 30	59	71.0	3.53	23	91	8	52	70.1	4.38
Waupacca	24	91	21	55	69.3	.....	19, 24	92	31	50	64.5	.....
Embarrass	10, 24	88	29	50	64.2	3.73	19	90	31	48	65.5	6.03
Rocky Run	10, 24	86	29	56	69.1	2.94	24	90	30, 31	52	73.5	5.06
Madison	10, 24	84	20	58	69.1	3.63	24	89	5	54	66.9	5.92
Edgerton	7	88	29	54	69.3	.....	19, 23, 24	92	8	55	70.5	5.90
Baraboo	10	90	29	52	68.9	2.50	24	94	7	48	69.3	4.13
New Lisbon	24	95	30	52	72.2	.....	19, 24	94	30, 31	50	68.8	.....
Bayfield	1, 9, 25	86	28	50	65.9	.....						
Averages					68.7	3.12					68.0	4.24
MINNESOTA.												
Afton	2, 24	91	29	52	68.7	1.60	3, 18	87	31	52	67.7	7.30
St. Paul	24	90	4	56	69.7	1.67	12	84	17, 30	56	68.5	7.62
Minneapolis	2	92	19	52	68.5	2.95	3, 11	85	30	52	68.1	11.64
Sibley	24	91	29	47	66.3	3.19	4	87	30, 31	51	68.8	5.42
Koniska	21	90	4	50	63.7	1.40	4	81	{ 17, 28, 29, 31, }	50	64.9	5.75
New Ulm	24	92	4	55	71.3	2.90						
Madelia	24	91	28	56	72.6	3.25	4, 18	94	16, 28	58	75.1	7.04
Averages					69.1	2.42					68.8	7.46
IOWA.												
Clinton	10	88	21, 29	55	70.7	6.50	24	95	8	54	72.6	8.45
Davenport	10, 24	84	21	59	70.4	11.46						

Table showing the range of the thermometer, &c., for July and August—Continued.

States and stations.	JULY, 1869.						AUGUST, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
IOWA—Continued.		°		°	°	In.		°		°	°	In.
Waukon	9, 24	87	4, 20	56	68.6	.....	4, 23	91	6	52	69.1	.....
Dubuque	24	91	29	58	72.1	3.54	24	95	6	53	72.3	7.76
Monticello	10	88	30	50*	71.8	8.31	19	90	7, 31	54	71.6	6.41
Bowen's Prairie ..	24	88	5	54	68.2	5.60	23	91	7	50	68.7	5.55
Fort Madison	9, 10	90	29	60	74.3	7.05	20, 23	93	31	52	76.0	5.91
Guttenberg	10, 24	90	21, 29, 30	50	68.1	.....	4, 24	92	8	48	69.2	.....
Mount Vernon	23, 24	88	4, 29	60	71.6	.....	27	92	31	51	71.8	.....
Iowa City	10	86	21, 29	52	70.9	7.42	24	93	8, 17	57	74.3	11.43
Independence	24	91	4, 20	58	71.1	7.95	19, 23, 24	92	31	55	72.6	8.15
Near Independence	14	95	21, 28	55	72.3	9.40	27	97	7	53	72.8	6.80
Waterloo	10	87	6	54	71.0	7.40	4	94	28	50	71.0	7.10
Vinton	24	92	20	60	72.0	4.70	4, 13, 24	93	6, 31	59	72.3	7.40
Rockford	2	86	4	54	71.1	.....	4	88	8	52	69.3	.....
Newton .....	.....	.....	.....	.....	.....	.....	23, 24, 27	92	7	54	72.4	8.95
Iowa Falls	24	92	4, 30	58	71.2	7.70	.....	.....	.....	.....	.....	.....
Algona	24	84	29	56	68.1	.....	4, 22, 23	88	31	52	69.0	.....
Mineral Ridge	24	87	5, 28	58	72.1	11.30	17, 23	99	20	54	72.7	7.90
Fontanelle	2, 23, 24	89	28	57	73.7	14.50	.....	.....	.....	.....	.....	.....
Rolfe	2, 8, 24	90	29	55	72.5	4.85	4	98	30	56	72.8	4.97
Grant City	23	95	28	56	73.8	6.00	3	98	30	56	75.1	8.52
Logan	10	87	29	51	68.8	8.90	5, 26	88	5	51	71.0	7.90
Woodbine	2	91	{ 4, 5, 25, 28 }	54	70.1	.....	4	94	30	54	73.6	.....
Averages .....	.....	.....	.....	.....	71.1	7.80	.....	.....	.....	.....	71.9	7.55
MISSOURI												
St. Louis University	17	93	5, 21	63	77.5	2.26	23	95	31	61	79.6	4.79
Allenton	13, 15, 16	95	30	54	74.6	1.82	23	101	8	55	77.1	2.75
Hematite	16	94	22	61	77.8	4.55	23	96	9	63	79.7	7.10
Rolla	14, 16	90	21	61	74.8	4.00	27	93	7	62	78.0	1.97
Jefferson City	14	92	21	60	76.0	.....	24	96	31	60	76.0	.....
Keytesville	9	94	20, 21	62	75.4	7.55	.....	.....	.....	.....	.....	.....
Hermitage	6	92	20	58	74.0	5.25	27	96	8	59	77.3	1.04
Bolivar	16	93	21	65	78.6	3.10	28	95	8	66	81.8	2.81
Warrensburg	3, 16	92	5	62	80.8	3.01	26	100	7	62	80.4	4.35
Harrisonville	16	92	20	62	75.4	2.03	{ 6, 24, 25, 26, 27 }	94	8, 29	62	77.1	3.85
St. Joseph	10, 13, 23	89	20	65	79.7	8.40	27	95	31	63	79.3	5.41
Oregon	2, 9	91	30	58	74.8	5.74	27	97	30	61	77.7	6.90
Averages .....	.....	.....	.....	.....	76.6	4.34	.....	.....	.....	.....	78.5	4.10
KANSAS.												
Atchison	1, 13	91	30	61	76.1	8.85	6, 26, 27	96	7, 30, 31	65	80.1	4.25
Leavenworth	16	100	20	55	75.5	9.00	6	103	30	63	78.9	3.41
Olatha	12	98	20	59	67.5	17.70	25	97	29	61	78.1	4.90
Paola	{ 3, 9, 13, 15, 16 }	{ 90	20	62	75.9	8.86	26, 27	96	29	63	78.2	7.90
Baxter Spring	17, 26	92	18, 29	72	81.4	4.60	24, 26	98	30	74	84.8	1.85
Lawrence	16	90	29, 30	55	72.2	5.05	6	94	30	58	75.3	6.46
Holton	13	96	20	63	78.3	.....	2, 6	98	31	62	80.7	.....
Le Roy	16	100	30	60	77.5	2.40	25	104	29	66	82.2	2.95
State Agr'l College	13	93	25	56	73.5	6.27	27	91	30	62	76.0	2.42

Table showing the range of the thermometer, &c., for July and August—Continued.

States and stations.	JULY, 1869.						AUGUST, 1869.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
KANSAS—Cont'in'd.		°		°	°	<i>In.</i>		°		°	°	<i>In.</i>
Council Grove	{ 9, 13, 16, 24, 27 }	90	30	62	77.8	4.50	6	95	29	62	80.0	9.60
Crawfordville	12, 14	90	21	55	74.3	1.55	.....	.....	.....	.....	.....	.....
Averages .....	.....	.....	.....	.....	75.5	6.88	.....	.....	.....	.....	79.4	4.86
NEBRASKA.												
Dakota	23, 24	94	5, 28	60	73.3	.....	4	99	29	54	74.8	.....
Omaha Mission	2	93	28	60	72.0	4.27	.....	.....	.....	.....	.....	.....
Elkhorn	2	90	28	57	72.0	.....	5	93	17, 20	59	73.7	.....
De Soto	2, 23	91	28	56	71.3	8.60	5	95	20	56	73.6	6.25
Fontanelle	2	92	4, 28	60	62.2	9.40	5	97	7	61	.....	.....
Bellevue	2	89	29	60	74.1	5.60	5	92	30	57	75.9	11.20
Glendale	2	92	{ 25, 28, 29 }	56	73.3	7.50	5	94	29	53	75.2	8.00
Decatur	13	92	28	56	72.0	4.23	.....	.....	.....	.....	.....	.....
Averages .....	.....	.....	.....	.....	81.5	6.60	.....	.....	.....	.....	74.6	8.48
UTAH TERRITORY.												
Coalville	25, 27	91	11	60	72.1	.....	17	91	10	54	70.5	.....
G't Salt Lake City ..	22	93	18	62	73.0	.....	2, 14	88	{ 13, 17, 25, 26 }	65	76.7	.....
Averages .....	.....	.....	.....	.....	72.6	.....	.....	.....	.....	.....	73.6	.....
CALIFORNIA.												
Monterey	13	80	9	50	65.7	0.01	5	80	24	45	61.8	0.00
Watsonville	12	84	8	53	70.0	.....	.....	.....	.....	.....	.....	.....
Vacaville	19, 25	98	8	59	75.8	0.05	9	98	12	56	73.4	0.00
Stony Point	14	97	6, 7	55	69.4	0.20	.....	.....	.....	.....	.....	.....
Averages .....	.....	.....	.....	.....	70.2	0.09	.....	.....	.....	.....	67.6	0.00
MONTANA TERR'Y.												
Deer Lodge City ..	20, 29	92	6, 7	45	66.5	0.25	6	95	16, 19, 23	40	63.1	0.50
WASHINGTON TER.												
Port Angeles	31	69	7	55	60.2	.....	.....	.....	.....	.....	.....	.....

NOTES OF THE WEATHER FOR JULY, 1869.

Houlton, Me.—Very hazy 2d, 4th; slight frost 6th.

Williamsburg, Me.—Strawberries 8th; raspberries 25th; blueberries 29th.

West Waterville, Me.—Smoky 25th to 31st; one entirely clear day.

Gardiner, Me.—Month cold and dry; so little moisture in two years only—1844, 1.47 inches, and 1864, 0.59 inches; fair days, 24.

Standish, Me.—Most terrific thunder storm since 1818 on 8th.

Norway, Me.—Smoky 1st to 4th, and 25th to 31st; auroras 3d, 18th; very few thunder showers in July.

Cornish, Me.—Terrific thunder and hail-storm 8th. Struck seventeen times in both chimneys in one house, entering every room and killing two persons. One other person was killed and some cattle; and buildings, trees, rocks, &c., were hit.

Stratford, N. H.—July 7 degrees colder than last year; but few drying days.

Whitefield, N. H.—Auroras 3d, 17th; very smoky 3d, 31st; haying began 12th; "catching weather."

North Barnstead, N. H.—July ends with drouth, low wells, &c.

Goffstown Center, N. H.—July rather dry; showers light.

North Craftsbury, Vt.—A cool July, 8 degrees colder than in 1868.

Randolph, Vt.—Much smoky and cool weather; rain well distributed through the month.

West Charlotte, Vt.—Auroras, red, 2d, 20th; crimson 11th, 12th a. m. and p. m., 14th, 19th, 29th; ripe cherries 21st; cut winter wheat 31st.

Panton, Vt.—Aurora 13th; very heavy dew 28th.

New Bedford, Mass.—Chestnut blossoms 15th; catalpa 18th; altheas 27th.

Lunenburg, Mass.—July average mean temperature for thirty years, 70.86 degrees; for 1868, 75.07 degrees; for 1869, 70.19 degrees; ground dry at close.

Amherst, Mass.—Much smokiness through July.

Newport, R. I.—Month dry; good hay weather, well improved.

Waterbury, Ct.—Smoky or hazy 2d, 23d, 24th, 31st.

Colebrook, Ct.—A slight frost on low grounds 5th.

Moriches, N. Y.—Many and severe electric displays, doing much damage, and killing one woman in bed.

South Hartford, N. Y.—Month much cooler than average; no really hot day; not much rain, but cloudy and damp.

North Hammond, N. Y.—Cool, cloudy; many light showers.

Houseville, N. Y.—Auroras 3d, 18th; thunder showers on six days.

Leyden, N. Y.—Faint aurora 15th; rain-fall of 1868 to August 1st, 11.67 inches; this year, 21.57 inches; July, 1868, 2.20; 1869, 6.04 inches; mean temperature 9.75 degrees colder than in 1868.

Depauville, N. Y.—Auroras 3d, 13th, 18th; harvesting winter wheat 25th; July temperature 10.30 degrees below last year.

North Volney, N. Y.—Auroras 3d, 5th; July temperature 8.11 degrees below July, 1868.

Palermo, N. Y.—Wettest and coldest summer in twenty years. They come in cycles of seven years, (1851, 1858, 1865;) so this is an exception.

Waterburg, N. Y.—Aurora 18th; a rainy, foggy month.

Himrods, N. Y.—Thunder showers frequent 13th to 17th, with high wind 17th, uprooting trees near Penn Yan, with hail 25th, destroying gardens in Dundee; all southwest to northeast.

Little Genesee, N. Y.—Very wet month, but no great flood.

Suspension Bridge, N. Y.—Most terrific thunder-storm 16th. For two hours intense lightning flashed on the wires across the bridge, and thundered immense masses of rock from the banks into the river below; no damage done.

Buffalo, N. Y.—Isabella grape bloomed 8th; two heavy thunder-storms 16th. Except a few days July was cool, dark, stormy; temperature 1.6 degrees lower than average of eleven years, and rain-fall 1.7 inches above July average of eleven years.

Newark, N. J.—A pleasant month; many hazy days; no storms; temperature only 1 degree below average of twenty-five Julys, (hottest, 1849, 76.84 degrees; coolest, 1859, 70.23 degrees;) rain about average.

Newton, N. J.—Many slight showers and hazy days in July.

New Germantown, N. J.—Thunder-storm and tornado 16th, prostrating peach orchards, forest trees, &c.

Newfield, N. J.—Wheat harvest 5th; oats 17th; dewberries ripe 10th; katydids 31st. First half of July dry, last half, copious rains.

Greenwich, N. J.—Peaches ripe 8th. Very little rain till 26th; greatest drought since 1864.

Vineland, N. J.—Violent thunder-storm 27th. Early in July dry, crops suffered, but at its close rain plenty.

Fallsington, Pa.—A cool July with many smoky days.

Plymouth Meeting, Pa.—Wheat harvest 7th; oats 22d.

Dyberry, Pa.—Mostly good weather for hay and rye harvest; streams low and some springs dry.

White Hall, Pa.—Severe gale 16th, scattered sheaves of grain, up-rooted trees, damaged bridges and buildings, and blew down more than half the pears, apples, &c.

Factoryville, Pa.—Much haze or smoke and fog during July; temperature 3 degrees colder than in 1868, and 2 degrees colder than average of five years.

Reading, Pa.—Month hazy, showers light, air cool.

Carlisle, Pa.—Wheat cut on slate land 2d; oats 22d; chestnut blossoms 6th; corn tasselling 26th.

Fountain Dale, Pa.—July 4 degrees below that of 1868—neither heat, rain, nor humidity in excess.

Tioga, Pa.—Coldest July in thirteen years—much clover hay damaged.

Grampian Hills, Pa.—Chestnut blossoms 14th. Most of the month too wet to cultivate corn and make hay; clover injured.

Franklin, Pa.—Month cool and wet, with heavy thunder showers.

New Castle, Pa.—Wettest July since 1855; no severe storms, many days resembling Indian summer.

Milford, Del.—Locust heard 25th; katydid 31st. Very dry to 27th, but heavy dews saved vegetation.

Woodlawn, Md.—Smoky or vapory throughout July.

Hampton, Va.—Violent storm, with hail, 29th, tore a dwelling to pieces. The four weeks ending 29th the hottest in twenty-two years; vegetation suffered from heat and drought, but recent rains revived it.

Zuni Station, Va.—Much smoky, hot weather throughout July, with drought and oppressive air.

Bacon's Castle, Va.—Aurora 15th and 16th. Till 21st very hot and dry, (seven days 100 degrees and more,) then mild and showery.

Lexington, Va.—Indian summer air up to 5th; blankets needed 21st; drought terrible 31st; fields look as in November, corn gone.

Lynchburg, Va.—Weather very dry; corn, &c., dried up.

Snowville, Va.—Hail-storm 2d. Very dry month; corn wilting.

Wytherville, Va.—Smoky 5th, 6th, 7th; fogs dense 8th, light 30th, 31st; violent thunder-storm 19th. Month generally dry.

Weston, W. Va.—Month extremely wet; corn could not be cultivated, and was abandoned to weeds.

Goldsboro', N. C.—Severe drought till 20th injured crops on uplands.

Mt. Olive, N. C.—First cotton bloom and green corn 1st. Drought killing oaks and lessening crops one-third. Cotton promising.

Oxford, N. C.—More cloudiness and less rain than ever had; corn injured.

Albemarle, N. C.—Slight rains have revived crops in the vicinity, but crops here still suffering.

Statesville, N. C.—On 14th, at 8 to 9 a. m., two or three reports, then a racket like wagons on stony ground. Probably an ærolite exploded. No jarring of the ground was felt.

Gouldsylvle, S. C.—Smoke or dry haze 4th to 10th; warmest weather in several years, 11th to 16th. Very little thunder this year.

Anderson C. H., S. C.—Very hot 26th ultimo to 16th instant; katydids heard 4th; cotton worm seen 14th.

Carlowville, Ala.—Thunder-storm with some hail 27th.

Moulton, Ala.—Warm and cloudy month; not one fair day; no storms or high winds; crops good.

Havana, Ala.—Lightning and thunder nearly every day, but very little rain; some fogs.

Jacksonville, Fla.—Lightning and thunder this month very severe; humid atmosphere made it seem hotter than usual, but temperature was two degrees below July average, and two inches less rain than usual.

Ocala, Fla.—Lightning and thunder every day in July.

Bellona Falls, Tex.—Rains and sudden changes of thermometer all July caused disease in men and animals and cotton plant.

Gilmer, Tex.—Month favorable for corn and cotton.

Blue Branch, Tex.—Continuous rain 4th, 5th, 6th. Colorado River seventy-five feet above low-water mark and nine and a half feet higher than ever known; damage in Bastrop county alone estimated at \$1,500,000; thermometer stationary at 73 degrees and 74 degrees during the storm.

Lavacca, Tex.—Ripe figs 10th. Heavy rains and floods.

Austin, Tex.—Remarkable rain 4th, 5th, 6th, 7th, 9.1 inches; flood in Colorado river swept away crops, buildings, and people; here, none swept away. At San Antonio 14.5 inches of rain fell.

Lockhart, Tex.—Continuous rain 4th, 5th, 6th, and heavy showers 7th, with wind squalls from south and southwest, and lightning and thunder; floods unprecedented.

Memphis, Miss.—At 2 a. m. 1st, three distinct shocks earthquake; at 2.15 a. m. 26th, another shock.

Grenada, Miss.—From middle of June to middle of July severe drought; July hot till 16th; since then cool and showery.

Brookhaven, Miss.—Heavy rain; storm from northwest 8th; prostrated corn and timber; whippoorwill ceased its cry 28th.

Elizabethton, Tenn.—From 4th to 9th like Indian summer. July rains mostly showers with little electric display.

Clarksville, Tenn.—At 2.19 a. m. 2d, earthquake for a few seconds; another at 2:36 a. m. 26th of two or three seconds, both shaking windows; whitish haze in upper atmosphere 30th, 31st.

Trenton, Tenn.—Earthquakes, [date not understood.] From 21st to close, very dry, no dews, nights cool.

Austin, Tenn.—Very smoky 5th, 6th, 7th, 8th; heavy thunder 4th, 12th, 16th, 26th.

Pine Grove, Ky.—Very smoky 6th, 7th; fine farming weather at the close of the month.

Clinton, Ky.—Earthquake 2 a. m. 2d, rattled dishes and glasses; another 2 a. m. 22d, quite severe for five seconds, from southwest to northeast; yet another 2 a. m. 26th, ten seconds, slight rain with distant thunder at the time.

Gilmore, O.—Grasshoppers plenty, and potato-bugs, doing little damage, 19th; smoky upper air 30th, 31st.

No. Fairfield, O.—Showers, not ten minutes all day without thunder, 16th; incessant thunder and sheets of rain 28th. July very wet, drowned crops, muddy harvesting.

Westerville, O.—On 1st two large spots on the sun, one on each side of the equator; and two small ones, one on each hemisphere.

North Bass, O.—Hail size of peas 20th; injured grapes much.

Bowling Green, O.—From 1st to 11th very smoky. Many July showers but no long rains.

Kenton, O.—Three violent thunder-storms 16th, 19th, and 20th, 28th. A spring and summer of heavy rains and severe storms.

Urbana, O.—Average July temperature for 17 years 74.5 degrees; this year 1.75 degrees lower, and 7.73 degrees below July, 1868. Rain-fall greater than in any July in 17 years; nearly twice the average, and nearly four times that of July, 1868.

Jacksonburg, O.—Faint auroras 10th, 25th; incessant lightnings on evenings 13th, 15th, 16th. Miami river rose eight feet in 6 hours 19th; thunder-storm with large hail 28th.

Alpena, Mich.—Up to 10th weather uniform; air smoky.

Old Mission, Mich.—Red clover ready to cut 9th, wheat 31st.

Grand Rapids, Mich.—Growing weather, but too wet for harvesting.

Northport, Mich.—Smoky; the wettest and coldest season in twenty years—exactly the reverse of last year.

Otsego, Mich.—A rainy harvest, but wheat secured in good order by 31st.

Aurora, Ind.—Month remarkable for smoky atmosphere.

Veray, Ind.—Linden blossoms 1st; smoke, with odor of burnt wood, changing to that of burnt straw, 4th to 8th; vegetation suffering from drought 24th; bowel complaints, many fatal, 26th; thunder and hail-storm 28th.

Mt. Carmel, Ind.—Five days of smokiness ended 8th.

Muncie, Ind.—Greatest rain-fall in July since September, 1866, (when we had 11.72 inches,) but no damage except retarding corn.

Valparaiso, Ind.—Like Indian summer for several days up to 9th, also 22d, 23d, 30th, 31st. Rain-fall for July 11.25 inches.

Merom, Ind.—Wabash river twice over banks in July, destroying much corn on low lands.

Kentland, Ind.—More rain than in any month ever known here—generally thunder showers.

Marengo, Ill.—First eight days smoky; mean temperature 2.18 degrees colder than average of eight years, and 11.78 degrees colder than in 1868.

Belvidere, Ill.—Auroras 16th, 26th, 28th. Month wet and cool with an unusual amount of smoky weather.

Ottawa, Ill.—Rain, thunder-storms, and freshets.

Winnebago, Ill.—Temperature 4.52 degrees below average of twelve Julys, and 11.65 degrees below last July.

Tiskilwa, Ill.—A showery, thundery month, except last week.

Hennepin, Ill.—Smoky and considerably rainy month.

Springfield, Ill.—First part very smoky and very wet, last part good haying and harvesting.

Dubois, Ill.—Smoky 4th to 7th; katydid 17th. This July 3.176 degrees warmer than average of five Julys preceding.

South Pass, Ill.—Earthquake at 2.10 a. m. of 2d; rapid vibration for one second. Grapes rotted badly this month; general drought at close.

Galesburg, Ill.—Heavy rain 13th, causing greatest flood known here.

Mt. Sterling, Ill.—Thunder-storms on ten days; month 14.6 degrees colder than July, 1868.

Plymouth, Wis.—Average July temperature for five years 72 degrees.

Hingham, Wis.—Spring wheat heading 11th; oats 14th; cutting timothy and clover 15th; good haying 23d to 30th.

Embarrass, Wis.—Very light frost 29th. Month cold, wet, with much thunder and lightning.

Rocky Run, Wis.—Month of uniform low temperature and hazy atmosphere; sun, when visible, looked like burnished copper.

Baraboo, Wis.—A cool month; fruits plenty.

New Lisbon, Wis.—One clear and twenty rainy days in July.

St. Paul, Minn.—Of ten preceding Julys five have been cooler and only one had less rain, yet this month seemed wet and cool; on only one or two days was the air free from haze or smokiness.

Minneapolis, Minn.—Cutting barley 19th; hay gathered and spring wheat ripe 31st.

Sibley, Minn.—Dense smoke 3d to 7th; odor like illuminating gas.

Koniska, Minn.—Frost 28th, killing vines in some places. Coolest July in many years.

New Ulm, Minn.—Aurora 15th; new barley threshed the 30th.

Madelia, Minn.—From 3d to 9th very smoky atmosphere.

Clinton, Iowa.—An excessively wet month; think the gauge does not indicate it fully.

Waukon, Iowa.—Heaviest thunder-storm this year 24th. Coolest summer and largest rain-fall thus far in many years.

Monticello, Iowa.—A very wet month; eight days' rain in succession.

Iowa City, Iowa.—July like June, frequent rains.

Independence, Iowa.—Not a clear day, but some hazy sunshine.

Mineral Ridge, Iowa.—Dense smoke or fog 3d to 6th; thunder-storm with hail 19th.

Rolfe, Iowa.—Air very smoky 3d to 8th.

Fontanelle, Iowa.—Very smoky 3d to 10th and 25th to 31st, with eleven days of lightning and thunder.

Woodbine, Iowa.—Harvest began 19th; rainy until 20th.

Hematite, Mo.—Thunder-storm 3d; over 1.25 inches of rain fell in ten minutes; very hazy 4th to 7th; katydid 24th. Month cool, equable, pleasant, not one wholly clear day.

Rolla, Mo.—Nights cool with drenching dews; month 10 degrees colder than in 1868.

Jefferson City, Mo.—The river falling after a high, long rise 26th; grape rot disappearing; rotted grapes dry up and no new rot 31st.

Hermitage, Mo.—No hail or hard winds this month; temperature below that of July, 1868; maximum sixteen degrees, minimum ten degrees, and mean 9.8 lower.

Oregon, Mo.—Grasshoppers infested with parasites and leaving in great numbers 2d to 10th; thunder-storm succeeded by auroral light 12th; faint aurora 17th.

Burlington, Kansas.—No excessive heat; rains to mature early corn, and fine crop of hay; rain-fall 2.55 inches.

Olatha, Kansas.—Great rain 10th, 11th—overflowed gauge.

Paola, Kansas.—Great rain from north 10th; greatest freshet ever known in Paola creek.

Lawrence, Kansas.—Beautiful, comfortable month, 13.68 degrees colder than in 1868, and dampest month, thus far, in 1869.

Holton, Kansas.—Many showers, few heavy rains, good growing but bad harvesting weather.

Council Grove, Kansas.—Smoke like a shower of fog from northwest at 6 p. m. 3d, till p. m. 5th.

Crawfordville, Kansas.—Frequent heavy thunder-storms; on 25th one flooded the country.

Elkhorn, Neb.—Coldest July but one in twelve years; rains heavy and frequent, but cloudiness moderate.

De Soto, Neb.—Myriads of grasshoppers flying north 2d.

Bellerue, Neb.—More rain fell from 12th to 18th than ever known in same time.

Glendale, Neb.—Dense smoke from north 3d, 4th, 5th, 6th, 7th; rain every day 6th, 7th, 12th to 19th, (ten days.) A cold, wet month; harvest ten to fifteen days late; mean temperature ten degrees lower than July, 1868.

Coalville, Utah.—Locusts flying southeast 16th, southwest 20th, 23d, 24th; in immense swarms 30th, 31st.

Harrisburg, Utah.—Hottest month this year, 3 degrees warmer than ever known here; crops suffering from heat and drought.

Watsonville, Cal.—Summer cooler than usual, and consequently less sickness.

Stoney Point, Cal.—Barley harvest 1st; wheat began 6th; rain 8th, very unusual here.

Deer Lodge City, Mon. Ter.—Drought; streams never known as low; crops suffering; mining almost stopped.

Winnipeg, British N. A.—Smoky from 1st to 9th, also 23d, 24th, as from burning prairies.

NOTES OF THE WEATHER FOR AUGUST, 1869.

NOTE.—All the notices of the eclipse on 7th are omitted in these notes for lack of room, and transferred to the Smithsonian Institution for use there.

Lisbon, Me.—Fine aurora 6th; light frosts 6th, 7th, 8th, 22d, 31st.

Houlton, Me.—Frost cut some cucumber vines 27th. Month cold with frequent showers; no lightning.

Steuben, Me.—Frost and aurora 27th. Drought great.

Gardiner, Me.—Auroras 5th, 6th, 16th, 27th. Month very cold and very dry—3 degrees colder than average of thirty-three years, (66.98 degrees;) 1866 was one degree colder; in 1837, 63.43 degrees; in 1844, 63.81 degrees. But two Augusts of so little rain; in 1841, 1.08 inches, in 1868, 1.06.

Norway, Me.—Frost killing corn in some places 8th; harvesting wheat and rye 11th. Frost night of 31st killing some corn and potatoes. Much smoke and dry weather in August.

Cornishville, Me.—Aurora 6th. Average temperature of August for forty years 64.15 degrees.

Stratford, N. H.—August cloudy and 5 degrees colder than in 1868.

Whitefield, N. H.—Aurora 10th; cutting rye and oats 15th.

Goffstown Center, N. H.—Sharp frosts 6th, 7th, destroyed cranberries; Month dry, and springs low.

Craftsbury, Vt.—Light frost 6th; aurora 24th. August five degrees colder than in 1868, and seven degrees than in 1867.

Randolph, Vt.—Slight frost 6th. A cool month and summer.

Woodstock, Vt.—Slight frost 6th, 7th; flakes of snow seen on high lands 31st.

Near St. Albans, Vt.—A deluge with heavy thunder and incessant lightning 19th, 20th; stormed from Montreal to Richmond.

West Charlotte, Vt.—Crimson auroras 1st, 7th, 14th, 22d, 27th; early harvest apple ripe 16th; field corn roasting ears 30th.

Georgetown, Mass.—Mills stopping for want of water 8th; many meteors seen 9th, 10th; crickets 12th; aurora 24th.

West Newton, Mass.—The driest August in many years.

Mendon, Mass.—Ground dry; sandy soils suffering; wells low.

Lunenburg, Mass.—Month dry, and 1.47 degrees colder than average of thirty years.

Hinsdale, Mass.—Sharp frost 8th, and night of 31st.

Newport, R. I.—Mean temperature of three summer months—for 1864, 69.9 degrees; 1865, 70.2 degrees; 1866, 66.2 degrees; 1867, 65.6 degrees; 1868, 64.1 degrees; 1869, 67.5 degrees.

North Fairfield, Ct.—Slight frost on low ground 7th, 8th; streams and springs lower than for several years.

Moriches, N. Y.—Auroral displays 6th and 27th.

Hudson, N. Y.—Red aurora 10th; auroral clouds 27th.

Garrisons, N. Y.—Very dry; pastures and many streams dried up.

North Hammond, N. Y.—Auroras 28th, 39th; very bright 30th.

Leyden, N. Y.—At 9.30 p. m. 25th, a singular appearance followed the sun's pathway, somewhat resembling a rainbow, and was seen from Philadelphia to Canada, and from Massachusetts to Michigan—perhaps further. What was it?

Depauville, N. Y.—Auroras 5th, 6th, 10th, 15th; August 1.70 degrees colder than average of five years, and rather dry.

Palermo, N. Y.—Coldest August, except in 1862, in sixteen years. The summer 66.4 degrees; only 0.9 degrees below the average of sixteen years.

Waterburg, N. Y.—Auroras 6th, 24th, 27th.

Himrods, N. Y.—Auroras 5th, 10th, 24th.

Buffalo, N. Y.—Month one degree colder than average for eleven Augusts past.

Newark, N. J.—Month but 0.6 degrees below the average temperature of twenty-five Augusts, (70.92 degrees;) but drought was unusual, only three in twenty-six Augusts having less rain. The mean temperature of twenty-five summers is 70.80 degrees; this 70.30 degrees; the warmest, 1850, 72.96 degrees, and the coldest of the twenty-five, 1859, 68.12 degrees.

Rio Grande, N. J.—Very bright meteor west 24th; train remained visible about fifteen minutes; everything drying up.

New Germantown, N. J.—Auroras 6th, 24th, 27th; a meteor in north-west 24th; it descended vertically from height of 40 degrees and exploded at 10 degrees, leaving a column of smoke at its explosion about three diameters of the moon in length, which remained fifteen minutes.

Haddonfield, N. J.—Concord grapes ripe 16th; meteor 24th.

Newfield, N. J.—Meteor at 7.15 p. m. 24th—size of a star of the first magnitude; train, zigzag, remained about fifteen minutes. Auroras 24th, 27th. A dry month; temperature above average.

Greenwich, N. J.—Auroras 6th, 27th; bright red and blue meteor 24th, leaving luminous vapor—in all eight minutes in sight. Mean temperature only about 0.6 degrees below average, but a dry month.

Vineland, N. J.—Meteors 7th, 8th, and 24th; month very dry.

Hamlington, Pa.—Frost 6th, 7th, and severe 8th; auroras 5th, 6th.

Philadelphia, Pa.—On 24th, at 7.25 p. m., a brilliant meteor shot from near *Ursa major* towards west, and when 30 degrees from horizon exploded, with brilliant coruscations from nucleus, leaving a cloud of vapor—in all, visible about ten minutes. Dryest August since 1854, when 0.918 inches of rain fell; average for last nineteen Augusts, 4.237 inches.

Plymouth Meeting, Pa.—From 5th to 28th very dry; brilliant meteor 24th.

Dyberry, Pa.—Slight frosts 6th, 8th—last killed buckwheat in some places; streams still very low.

White Hall, Pa.—Dryest August in fifteen years.

Factoryville, Pa.—Frosts 6th, 8th, and night of 31st; aurora 6th.

Ephrata, Pa.—Bright meteor 24th, burst like a rocket, scattering jets of light, and leaving a luminous train for about twelve minutes.

Carlisle, Pa.—Oats cut 1st; August dry, cool, and sunshiny.

Tioga, Pa.—Frosts 6th and 8th; coldest August day known here 6th.

Grampian Hills, Pa.—Frost 6th; first half of August dry and cool; last half showers.

Johnstown, Pa.—Conemaugh River lower than for many years.

Connellsville, Pa.—Bright meteor 24th, went northeast from Great Bear, disappeared half way to horizon, leaving a pale, cloudlike appearance behind for about two minutes; faint aurora 27th.

Woodlawn, Md.—Meteor 24th, from zenith in a northwest direction, exploded about 30 degrees above horizon, leaving a streak of light which remained twelve or fifteen minutes.

Emmitsburg, Md.—Meteor 24th, direction west-northwest, elevation 60 degrees or 70 degrees, moved slowly, and was very brilliant.

Bacon's Castle, Va.—Faint aurora 6th; mills stop grinding 12th; heavy, reviving rain 17th; large meteor 24th; summer very hot and dry; mean temperature 81.2 degrees.

Lexington, Va.—Frost 8th; drought excessive.

Wytheville, Va.—Frost 9th; katyids 13th; grapes shrivelled, and corn dried by drought 22d; reviving rain 28th.

Near Wytheville, Va.—Frost 9th and 10th; no rain of any consequence from July 19th to August 17th.

Albemarle N. C.—Streams low; springs drying up 22d; copious rain, but too late for crops 30th.

Asheville, N. C.—September 4th, no rain for six weeks.

Atlanta, Ga.—Very warm; crops suffer by drought.

Marietta, Ga.—On 10th counted thirty-six splendid meteors between 9.30 p. m. and 10.30 p. m. in about a quarter of the visible heavens—generally starting near the pole-star, passing near *Corona borealis*, and on toward *antares* in *Scorpio*.

Moulton, Ala.—Corn ripe 30th. Month hot and dry; but little wind.

Lavacca, Texas.—Northeast by north gale 16th, strong enough to lift a man off his feet; blew all night; hardest storm ever known here; the "Matagorda storm" of 1856 only excelled it in duration, lasting three days.

Brookhaven, Miss.—Cotton picking 23d; heaviest rain ever known here 27th; health of people never better.

Clarksville, Tenn.—Drought severe; pastures burned up; ponds and streams failing; few showers, and all very light.

Memphis, Tenn.—Brilliant meteor and many "shooting stars" 8th; first cotton in the city 11th; drought 20th; rain 24th, 28th.

Austin, Tenn.—The warmest day in many years 23d. The most destructive drought since 1854.

Pine Grove, Ky.—Grasshoppers and blister-flies numerous, and swamp blackbirds in great flocks feeding on them 26th; vegetables drying up 28th; copious rain 29th.

North Bass Island, O.—Aurora, beams, arch, and corona 6th.

Hillsboro, O.—No copious rain since July 8th; vegetation injured.

Bowling Green, O.—Auroras 6th, 24th. Too dry to sow grain.

Kenton, O.—Aurora 6th; many meteors; one very large 10th.

Urbana, O.—Fine aurora 27th. This month's mean temperature higher than any August in eighteen years; over two degrees above the mean of that period. August average of rain-fall for eighteen years, 3.73 inches; this month less than any August of the eighteen.

Jacksonburg, O.—Faint auroras 6th, 27th.

Alpena, Mich.—Cloudy or smoky all this summer 17th; excelsior oats just headed out 27th.

Northport, Mich.—Light frosts reported 29th, 30th, and fears of more.

Copper Falls, Mich.—Splendid aurora 6th, arches, streamers, clouds, and belts; terrific thunder-storm 18th and 19th.

Ontonagon, Mich.—Thunder-storm, deluge 18th; harmless frost 31st. A wet summer; Lake Superior fifteen inches higher than in several years.

Veray, Ind.—Meteor of first magnitude 13th; drought to 16th.

Kentland, Ind.—Some harmless frost in places 31st.

Valparaiso, Ind.—Auroras 6th, 24th; very hazy early in month; brilliant meteor 24th, apparent diameter 8 inches.

Marengo, Ill.—Thunder-storm and hail 4th; diffuse aurora 6th.

Belvidere, Ill.—A diffuse bright aurora all night of 3d; Indian summer to 8th; a wet summer.

Winnebago, Ill.—This August, 0.89 degrees above mean of twelve years; summer 2.52 degrees below mean of twelve summers.

Rochelle, Ill.—Thunder-storm 20th; greatest fall of rain in many years; from 9 to 11.75 inches fell.

Dubois, Ill.—This month is 8.73 degrees above the August average of five years.

Plymouth, Wis.—Aurora, pale, arch 6th, all evening.

Hingham, Wis.—Wheat cutting 23d; oats 25th.

Geneva, Wis.—Wheat and oats harvest 6th; stacking 27th.

Embarrass, Wis.—Slight frost 5th; bright aurora 6th.

Rocky Run, Wis.—Diffuse aurora 6th. Much wet weather.

Baraboo, Wis.—Very bright aurora 6th; almost frost 31st.

New Lisbon, Wis.—Light frost 6th; severe, and ice 7th.

Afton, Minn.—Aurora 24th, and a broad, band-like trail of light for five minutes, not connected with the aurora.

Minneapolis, Minn.—Very heavy rains 6th, 26th; more rain this month than in any other single month.

Guttenberg, Iowa.—Fine weather for harvesting grain.

Rockford, Iowa.—Beautiful harvest weather, and stacking nearly done.

Algona, Iowa.—Brilliant aurora, 24th. Month closes cool and dry.

Oregon, Mo.—Great storm 21st, streams never higher; faint auroras 24th, 28th.

Paola, Kansas.—On 14th fearful lightning, thunder, rain, high water.

Council Grove, Kansas.—Showery 9th to 15th; promise of dry fall.

Dakota, Neb.—End of wheat harvest 4th; fine aurora 24th. A wet August; potato bugs plenty.

Elkhorn, Neb.—Frequent and heavy dews and rains. Summer the coldest and wettest in twelve years.

Fontanelle, Neb.—Last fortnight very wet; the season wet and cold, yet on 24th the heat in places was over 100 degrees.

Bellevue, Neb.—Thunder-storm 28th; rain poured down and overflowed gauge; six to seven inches must have fallen.

Glendale, Neb.—Heavy rains 19th, 20th, 21st, 24th.

Coalville, Utah Ter.—Immense flocks of locusts procreating 11th to 15th; flying north 22d, 23d; slight frost at Weber River 16th, 17th.

Deer Lodge City, Mont. Ter.—First snow fell on Powell's Peak (13,800 feet high) 20th. Severe frosts this month; the driest August in twelve years; averaged 4.1 degrees warmer than last year.

